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The Chipping Sparrow

By NEWTON MILLER, Norton, Mass.

With photographs by the author

THAT this would be a dreary old world without birds has been well said. They have come to be an integral part of our lives, largely from the esthetic point of view. The conception, however, that a bird's life is all song and sunshine is misleading to say the least, but it is only comparatively recently that any serious attempt has been made to determine the actual work of the songsters. Such is the object of this brief chapter from the lives of a pair of Chipping Sparrows, presenting a glimpse, only, into their domestic affairs.

These birds chose, at the end of May, a nesting-site in an evergreen down at the corner of the garden, and early in June a dainty structure of rootlets, lined with a liberal amount of horse-hair, was swaying among the twigs of the larch, not more than fifteen feet from the ground. In due season it was made the recipient of three bluish green eggs, scarcely more than a half inch in length, with brownish black specks on the larger ends. Incubation followed anon, and on the morning of June 25 two hatched; the third proving to be infertile was subsequently ejected.

A desire to see all that transpired in and about the nest led to an arrangement of mirrors, which permitted the observer to see into the nest and also its immediate surroundings.

This simple apparatus was soon in readiness, but the birds objected to it so strongly that we removed it for the day. On the morrow it was deemed best to start with the mirror far out on the limb, and then at intervals to move it a little nearer the nest, thereby allowing the old birds to become accustomed to it gradually. This scheme worked, and by night the mirror was in place. All fear of the glass disappeared on the following day, and no attention was paid to it except when one of the Sparrows tried to drive away his image in it.

Thus with the birds fully reconciled, the observer, armed with a pair of

field-glasses, took his place in the shade to learn some of the ins and outs of the Chipping Sparrows' home-life. The young received their first food on the morning of June 26, and the feeding was repeated about every half hour throughout the day. The food consisted always, as far as could be determined, of small green caterpillars taken from the larch or garden. The next few days were mere repetitions of this one, except that the feeding-periods became far



NEST OF CHIPPING SPARROW

more frequent,—one every seven minutes on the average throughout the working day of fifteen hours. Also, larger morsels of food were added to the *menu*. Sometimes an insect proved to be too large; then it was mauled on a limb or picked to pieces before being returned to the youngsters.

All seemed to go well until the night of June 29, when a bird tragedy was enacted resulting in the death of one of the young. The single remaining offspring did not seem to require care of both parents, whereupon the female shirked all responsibility and began the construction of a new nest in the opposite side of the tree. The male was not discouraged in the least, but went about his duties with such renewed vigor that his charge very seldom called for food. Once in a while it clamored for more just as he left after feeding. The female, on the other hand,

returned to the first nest very few times, and then without any apparent interest in it. Likewise the male did not interfere with the operations in the opposite side of the tree; but down in the garden, working over the lettuce together, and in various other ways, it was plainly evident that they were still mates.

The condition now existing in this bird family gave us an unusual opportunity to obtain data on the activities of a single adult and nestling. Consequently these two were followed with much interest as long as the young re-

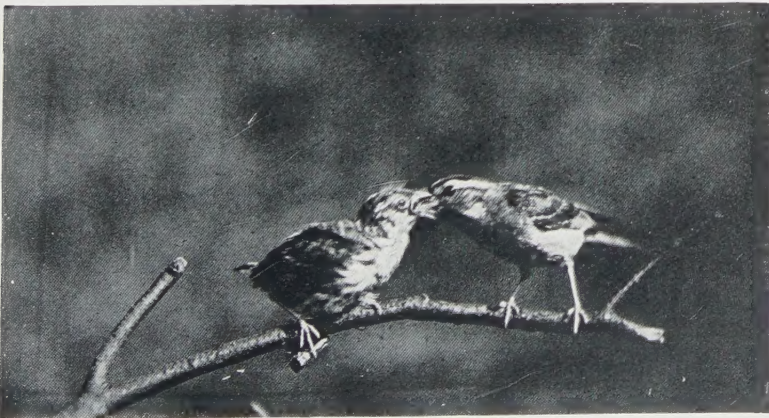
mained in the nest and for a few days afterward. A summary of a day with them will probably give the best idea of the work done by the male, also an index to the almost unsatiable appetite of the fledgling. We chose July 7, four days before the young left the nest, for this purpose.

One of our party arrived at 3.50 A.M. to find the birds already astir about the second nest, the female going about quietly while the male gave vent to his feelings in song which was cut short a half hour later by a chirp from the nestling that sent him scurrying off to the garden in search of food. The young received the first portion of its breakfast at 4.30.

Beginning at 3.50 A.M. and ending at 7.15 P.M., this bird-day comprised fifteen hours and twenty-five minutes. By the end of the hour following the first feeding, the young had been fed eighteen times, and a decrease in the number of feedings per hour followed until the low mark of four was reached during the noon hour and again at the end of the period terminating at 3.30 P.M. A decided increase began at the close of this period and was maintained up to 7.15 when the fledgling received its last visit and food for the day. The



CHIPPING SPARROW AT NEST



MALE CHIPPING SPARROW FEEDING HIS ONLY YOUNG

male departed at once, leaving the young to spend the night alone. During this long day of fifteen hours and twenty-five minutes the nestling received food 130 times, once every seven minutes on an average. The bill-of-fare included fifty caterpillars, eight beetles, three moths, and one grasshopper while the substance of sixty-eight feedings could not be determined.

We have said nothing of what the male ate. Surely he required as much as the fledging, undoubtedly more. If he ate only as much as his offspring he was



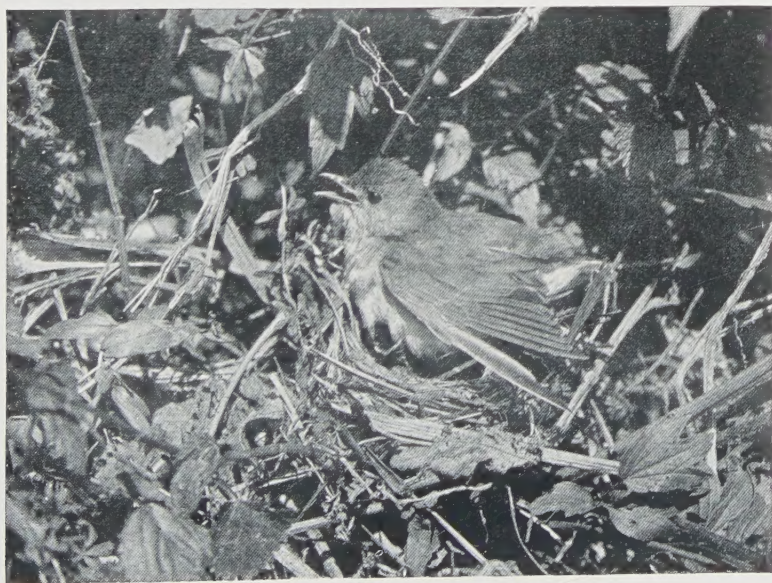
CHIPPING SPARROW AND YOUNG, AFTER FEEDING

instrumental, during a single day, in destroying 260 insects or their larvæ, taken almost exclusively from the garden. Such a day's work might be considered extraordinary, but not so. Usually the young number three to five, which means that the parents must double the activity of the one under consideration, or the nestlings must go without sufficient nourishment. The latter is undoubtedly the correct assumption; otherwise, with a brood of five, each parent would be obliged to visit the nest 325 times per day, i. e., once every 2.7 minutes, which is hardly probable. In the case of our Chipping Sparrows the male provided the fledgling with food, on an average, once every 4.5 minutes during the first four hours of the morning, a rate which if maintained throughout the day would have totaled 200 feedings. If this be the maximum (a number which the most diligent little Wood Pewee does not exceed) then it follows that even a family of four young are put on short rations or that one or two are nourished abundantly at the expense of the others, which explains, in part, the discrepancy in size so often observed among members of the same brood.

It is quite evident that a nest of five will keep the two adults busy. How many insects then should a family of seven consume per day? We can answer this only by making a number of assumptions, each or all of which may be far from the truth. Let us assume (1) that each of the old birds will eat as much as

the fledgling we observed; (2) that each of the parents will feed the young 200 times per day; (3) that only one insect is brought at a time (an underestimate since two and three larvæ or small insects were seen given at a single feeding). We thus arrive at the conclusion that a pair of Chipping Sparrows with five young will destroy no less than 660 insects per day. It is unnecessary to moralize upon the effect of a brood upon a garden during the sixteen days the young are in the nest and for the half-dozen or more they remain in the vicinity. Granted that our estimate is one-third too high, still we have about 10,000 'bugs,' including cutworms and other noxious insects, removed chiefly from the garden and lawn during this period. Such I consider a conservative estimate of the work of these birds for less than a month, which has a direct economic value to man.

The Chipping Sparrow is only one among a large number of birds which we are learning to appreciate for their work as well as for their songs and plumage. It is not surprising then that, with a knowledge of their economic importance, a wave of protest against their destruction is sweeping over this country. It does seem, in this connection, that for birds of the Chipping Sparrow type, which nest in the vicinity of dwellings, drastic measures should be taken to eliminate their two chief enemies—the cat and the English Sparrow.



VEERY BROODING

Photographed by Arthur A. Allen, Ithaca, N. Y.



SHORT-BILLED MARSH WREN NEAR NEST
 Photographed by A. A. Allen, Ithaca, N. Y.



LONG-BILLED MARSH WREN AND ITS NEST
 Photographed by Francis Harper, Ithaca, N. Y.

TWO MARSH WRENS

Pete: The Story of an Adopted Robin

By W. H. MUNSON, Winona, Minn.

DURING the first week after I adopted him, Pete accompanied me to and from the laboratory each day; and during that time he learned to pick up grains of sand, to flap his wings in mimic flight, to come to me at call, to drink from a dropper. During the next week he learned to recognize the difference between the appearance of the food-paddle and that of the dropper. When he had had enough food he steadfastly refused any further attention to the food-paddle, but when the dropper was presented he would eagerly stretch out his neck to drink. He also flew each day during the second week, always returning to me after each flight.

He took especial delight in a dust-bath, but much preferred the road-dust to the dry earth of the garden. When he wanted his bath he would go through some of the motions in his cage, and then stand and peep till I took him to the road, where he would revel for half an hour or more.

Pete is a tyrant. If we do not attend to his wants immediately, his tender little peep turns to a shrill staccato note that spells insistence in every sound. Yes, he is a spoiled child, we know; but you must remember that he is the only one in the family, and it is true that we have tried to anticipate his every need before he even knew it.

One of his flights gave me palpitation of the heart. I took him out in the morning for his exercise, and he flew up, up, over the trees, over the house, and was gone out of sight. Quickly I followed his general direction, but could find nothing of him. I went back to the house, put on a coat and hat, and explored the neighborhood, but he was gone beyond reclaim. A full half-hour I bemoaned my loss, and was giving up in despair, when out of the blue came a flutter of wings, and Pete alighted on my shoulder, shrilling his *peep, peep* into my ear. He was hungry and did not propose to wait another minute, nor did he. We went to the house, and no hungry child ever evinced greater satisfaction in eating than did this little bird.

Pete is a very wilful bird, and I am almost driven to say that he is intelligent. One evening I had taken him to the street for his dust-bath, but he was hungry and did not indulge himself very long. I had his food with me, and now and then he made savage little flights or runs toward it. Repeatedly I put him back in the dirt, scraped my finger around in it before him—that was the stimulus I used to awaken his instinct—but he would ruffle his feathers just a little and again dart for the food. I tossed him into the air to make him fly, for I felt that if he were hungry when he flew, he would be sure to come back quickly, but fly he would not. It was becoming dusk, so I finally fed him, and he awaited no invitation to fly; but invitations to return were in vain. He would alight not very far away, dust himself vigorously, but would not allow my close approach as he always had before. I was fearful of losing him, but I am almost

ready to think that he was paying me back. After a time he became as docile as you please. Always since, when I have refused him what he wants, he has been offish in some way or other, and never when I have treated him as he seemed to think he ought to be treated.

One noon after I had fed him and watered him, and cuddled him a little, he flew as I tossed him into the air. Over the trees and east he went, up and away till he was out of sight. Then I began his food-call, and in a few seconds he was at my feet a trustful, docile, and apparently happy bird.

Ultimately we released Pete permanently from his cage, insuring safety for the night by bringing him in at dusk.

It was a glad day for all of us when Pete learned to come to the back door and ask for food when he did not find enough in the neighborhood—for the neighborhood is his feeding-ground, and the neighbors are his friends. It was a glad day, too, when he first flew to the shelf where he was always fed. Many, many applications of the food-paddle are necessary to appease his hunger, and then he peeps for his drink. That administered, he cleans his bill on any convenient edge, and then wings his way out into the yard again.

Pete's antics touch me wonderfully. Does he really know me? Does he trust me? Young people have trusted me, and seemingly have given me a sight into their heart of hearts, and that is something to be thankful for. But here is a bird of the field, a wild thing with ages of the fear of abuse and treachery in his little breast, bound up in what we call instinct. Contentedly he cuddles in my cupped palm, and croons a little song so faint and sweet that it might charm the fairies of his native fields.

Out of the heavens that are all his for the taking he returns to perch upon my shoulder, and tell me in my ear that he expects me to feed him. He follows sometimes like a dog, and seems never so contented as when with me. He will be quiet for a long time, if I am very near; but if I leave him, he gives every sign of distress, unless I have just fed him to repletion.

Altogether, Pete is the strangest bird I ever knew, strangest in his modified instincts, strangest in his influence upon me, strangest in his every act, and pose, and note.

How is it? Why is it? May we have such intimate relations with God's wild things out-of-doors? And do they flee from us as from a known danger? Why, if birds may be thus tamed, may we not be surrounded with feathered songsters free to go and come at will, and yet looking to us for protection and for a part of their food, especially in times of stress?

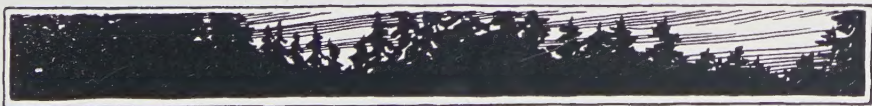
I've stroked the sitting Thrush in her nest, handled the young when the parents were not two feet away, and unprotesting; and because of these and other similar experiences, and because of my intimacy with Pete, I am the better; and further, I hope that bye and bye, when such friendships shall have multiplied, I may spell myself man, and question not,



The Hermit Thrush

By ERNEST HOWARD CROSBY

Before the sun of June
 Had bathed his forehead in the morning mist,
 I rose and rambled barefoot on chill dews
 That drenched the moss between squat junipers.
 Above the vaulted aisle of yonder pines
 The morning star was vanishing from earth,
 And we gazed speechless, pines and moss and I,
 Longing to cry farewell. And then God sent
 A voice to speak for all our brotherhood;
 For lo, at last we heard His Hermit Thrush,
 The tremulous vox-humana stop o' the woods,
 Let loose his pipe, like some high priest of sound
 In a cathedral,—and we listened there
 In thankful stillness to our inmost yearning
 Transmuted into song.



A Domestic Tragedy

By JULIA MOESEL, Ithaca, N. Y.

With photographs by A. A. Allen

IT WAS early in May, 1914, when many of our feathered friends were making their first appearance in spring. Indeed, great was the anxiety to be among the first to greet the new arrivals as they returned from southern climes, and greater still was that solicitude to be able to number among them some very rare migrant or chance summer visitant.

That May morning was an ideal one for bird-study, for there was every indication of a most promising day. With expectancy reaching the highest pitch, I set out determined to see everything. Following one of the shaded paths that course the shore of a small lake on one side and a woody hill on the other, I was attracted by some faint sounds and lisping *tseeps*. In the very tree-tops, the birds were enjoying themselves. Warblers were evident: the Black-throated Blue, the Cape May, the Chestnut-sided, the Nashville, the Parula, the Black-throated Green, and the Blackburnian. But neither new nor rare species could be counted among them.

Further into the depths of the wooded hillside I ventured. A strange song greeted my ears. It was a prolonged but interrupted warble followed by a few loud notes matchless for their tenderness and cadence. It was a melodious song indeed; the song of the bird I had long vainly looked for but never had the pleasure to see—the Blue-headed Vireo.

I watched him for some time, as he flitted from tree-top to tree-top, now hiding under the dense branches of the hemlocks, then giving an occasional musical chatter, or a pretty trilled whistle, or an enchanting short warble.

The next morning, I was determined to make a still further acquaintance with my new friend, and no sooner had I entered the woods than I was greeted by the selfsame song. I began to hope that he might stay with us for the spring, but the third day he was nowhere to be found.

About ten days later, however, when I was strolling along again, gazing among the tree-tops to see that no arrival might pass unnoticed, I was attracted by a rattling sound among the leaves on the ground. A careful look convinced me that it was the Blue-headed Vireo, my old friend, no doubt. He had found a piece of waxed paper which someone had discarded and implanting his little feet very firmly on one corner, unaware of my presence, he started in a very diligent manner to tear the opposite corner into small pieces about one centimeter square. I concluded that his nest was in the process of construction. Cautiously I followed him, and much to my surprise, I found the place for his new spring home in a branch of hemlock. A rather inconspicuous place had been chosen for the site, scarcely ten feet from the ground and about twenty feet from a much-traveled path in the woods.

I watched him while he sang at his work, every now and then returning

with bits of paper which he was using to adorn the exterior, and not until then did I discover, for the first time, the female sitting on a higher branch nearby, watching carefully so that no harm might befall the nest. Fearing I might be attracting too much attention I left for the day. The following morning the birds were nowhere in sight. My first impulse was to examine the nest more closely and I ventured to do so. It was made of dead and withered grasses, a few pine needles loosely arranged, and the pieces of wax paper all firmly interwoven. The whole, however, had a somewhat unfinished appearance. The next



BLUE-HEADED VIREO AND NEST

day I found the male bird twisting and turning himself in the nest, first this way, then that way, until he secured what seemed to him a perfectly comfortable shape. A few moments later he departed only to return with a mouthful of cobwebs with which he engaged himself about the edges of the nest. Very shortly, however, all was completed, and with a satisfied chatter he flew to a higher perch. Just then, however, the female reached the scene. Without ceremony she thrust herself into the nest to pass her judgment upon it, and woe and betide the masculine conceit. It proved far from satisfactory. She flew to a higher perch and uttered a few low guttural tones as much as to say, "Do you call this a perfect nest? I thought you knew how to build a better nest than that. It certainly does not meet my approval. I refuse to live in it until it is made satisfactory." The next day it had been perfected to suit her whims and fancies for I found her on the nest when I arrived. I was very curious to know whether eggs were actually present. Another visit in the after-

noon satisfied, or perhaps dissatisfied, my curiosity, for a Cowbird's egg had been deposited. For some time I debated seriously whether I should remove the Cowbird's egg from the nest. To me it seemed a perplexing situation for the Vireos to face. The unwelcomed egg was destroyed.

Early the following day, when both parents had slipped away for their breakfast, I managed to take another peep, and well was I rewarded, for there



YOUNG COWBIRD AND BLUE-HEADED
VIREO'S NEST

I saw one egg of the Vireo, followed by another on the second day, and a third on the succeeding day. I was exuberant with joy, and I longed to see the day when the young would crack their shells and get their first glimpse of the world.

The next day four eggs were found. Careful observation however, revealed that another Cowbird's egg had been slipped into the nest and lay by the side of the three of the Vireo's own. Just then, the male returned. He lit on the edge of the nest and glanced in. Something was wrong. He became alarmed, flew to a neighboring hemlock, singing with all the life and energy his little body possessed. What a strange action! His excitement was calmed by an outburst of song. Of course, I could not resist the temptation of removing the Cowbird's egg.

My frequent visits assured me that my new friends were becoming quite accustomed to my presence, for they offered no signs of alarm or curiosity. However, I was anxious to see how near I could approach without causing great disturbance. I had often heard of their confiding nature. Very carefully I raised my hand and tried to touch the beautiful hanging-basket. Not a stir! Not even a movement of the head to see who the intruder might be. I actually stroked its back. Instead of fluttering his wings, as the majority would do, he merely twisted his neck and looked at this ungainly sized hand. He was curious indeed, but not alarmed. He remained faithfully at his post. Excepting the Chickadee, I had never before had the pleasure of touching a wild bird. To me it was the event of spring. If I had only had a camera, what a delightful representation of confidence would I have secured.

As usual, I found the birds there the following day, flitting back and forth in search of food. They exhibited no signs of alarm, curiosity, or fear when they

returned so I concluded all was well. Once more I tried to see if the male still would have confidence in me. I stroked his head, touched his bill, and still he moved not a feather. That day I left the woods feeling quite proud that I had made the friendship of the long, but vainly sought Blue-headed Vireos. The next day Dr. Allen of Cornell and a friend visited the nest and were able to secure photographs as evidence of the bird's confiding nature.

On June 16, about twenty days after the first time the male was seen incubating, Dr. Allen again visited the nest hoping to find a family of Vireos, but much to his amazement all he discovered was a Cowbird fledgling. What a disappointment! Where were the young Vireos? No doubt, in our absence, another Cowbird had discovered the nest, and left the third bomb that resulted in this calamity.



CROW ABOUT TO FEED YOUNG
Photographed by Guy A. Bailey, Geneseo, N. Y.



BREWER'S BLACKBIRD

Snapping the Back-yard Birds

By PAUL H. DOWLING, Los Angeles, Calif.

With photographs by the author

IT IS a fine sport,—this business of photographing birds in your back yard,—especially if the subjects of your pictures are obliging enough to pose around a water-hydrant with no apparent fear of a kodak set up a few feet away. I found the Goldfinch the most accommodating of all of these back-yard birds. It was one of his favorite tricks to perch upon the water-hydrant, make a neat little bow as if saying "How do you do," and twist his neck around so as to dip his bill in the running water as it came slowly from the pipe.

To snap the birds I needed only a small amount of equipment: a folding Brownie No. 2A, a piece of string about twenty feet long, a pile of bricks to rest the camera on, and a chair in which to sit in the warm sun and wait till the birds got thirsty. About nine in the morning I took my post about twenty feet from the drinking-place. It was only a few minutes until the first Goldfinch flew down upon the hydrant from a tree nearby. He perched himself above the running water and tried to stick his whole head inside the pipe, drinking literally upside down. I tried to pull the string while he was in this queer position but the little fellow was too quick for me; so I had to content myself with a picture of him standing right side up. The Goldfinches do not seem to be afraid of the kodak but are so continually on the move that one has to make a quick snap at just the right time to get anything that looks like a bird on the film.

The hydrant that furnished the watering-place for the birds around my house stood only a few inches from the ground, and while it was too high for the

Goldfinches to reach, the Brewer's Blackbirds had little trouble in standing on the ground and taking their refreshment as the drops came from the iron. I allowed it to run just a few drops at a time so I could amuse myself watching the birds reach up for the water. As a matter of fact they seemed to enjoy this method of getting a drink about as well as any. There were three similar hydrants in the yard, so I had to keep two of them dry in order to get the birds in front of the one where the camera was located. It didn't take long for them to get into the habit of coming here, however, for they soon made this their Coney Island even when the others were running and in spite of the camera which stood only three feet away. The Blackbirds certainly valued fresh water, even insisted upon having it, for they utterly disregarded a pan of water standing below the hydrant—chose rather to crane their necks and catch the drops as they dripped from the pipe. These birds were just a little wary of the kodak and would edge up to the hydrant, get a drink, and scurry away when they heard the snapping of the shutter.



GOLDFINCH

Some Experiences in Attracting Birds—The Nesting of a Red-breasted Nuthatch

By HENRY S. SHAW, Jr.

IN THE fall of 1914 I began feeding the birds at my home in Dover, Massachusetts. There was nothing elaborate or unusual in the apparatus employed, which consisted chiefly of a window-shelf, a weather-cock feeding-house, several wire suet-baskets and a shallow pan for water. The feeding-house and suet-baskets were obtained from the Dover bird-warden. After some months I discontinued the use of the weathercock house (except during snowstorms), preferring to have the birds come to the shelf, where they could be more easily observed. The suet-holders were put where they could be readily seen from our windows, and three out of four were placed on pitch pines, whose rough bark seemed attractive to Nuthatches and Woodpeckers.

During the winter the shelf was visited most regularly by Chickadees and Red-breasted Nuthatches, with an occasional White-breasted Nuthatch and Junco. In the early spring a number of Purple Finches appeared, and later on Chipping Sparrows were occasionally seen. But the most unexpected visitor was a female Pine Warbler, which came to the shelf many times each day for two or three weeks. She kept busy while on the shelf picking up small particles of seeds, etc., especially bits of sunflower seeds left by the Purple Finches. One of the photographs shows the Warbler perched on the edge of the shelf.

There is nothing of particular interest about the shelf itself except, perhaps, the fact that it is easily removed for cleaning, and has rather high sides, to lessen the likelihood of the contents blowing off. I used sunflower seeds, hemp seeds, crumbs, and sometimes chopped nuts.

At the present time the bark of a pitch pine which stands near the shelf is quite thickly studded with the shells of sunflower seeds which have been wedged into the crevices by White-breasted Nuthatches. It is interesting to watch one of these birds take a sunflower seed from the shelf, fly with it to the tree, and then climb up and down the trunk until a crack in the bark is found which will hold the seed securely. Then the bird, generally head downward, hammers the seed vigorously with its bill and easily extracts the kernel. The little Chickadees also open the sunflower seeds by hammering on them with their bills, and they are able to deliver blows of considerable strength, the seed being held between the bird's feet, either on a small branch or on the edge of the shelf. In the latter case the noise of the pounding can easily be heard in the house, even in an upstairs room. The Purple Finches, on the other hand, can readily crush the seeds with their powerful bills and do not have to resort to any hammering.

The pan of water proved an attraction even in winter, and although the water often froze at night, it was an easy matter to knock out the ice in the

morning and refill the pan with water, which would generally remain unfrozen during the day.

Little need be said of the suet, except that of the twelve species of birds seen eating it the Chickadees, Nuthatches, and Downy Woodpeckers were the most plentiful. But it is interesting to note that, for a time in the spring, Pine Warblers, both male and female, came to the suet quite regularly.

The birds which interested me most, I think, were the Red-breasted Nuthatches, not only because of their tameness and quaint manners, but also because I associated them with the New Hampshire forests where I had first become acquainted with this species. These little birds were among my most regular visitors and seemed to be nearly as numerous as the Chickadees. They



FEMALE PINE WARBLER AT FEEDING-SHELF

Photographed by C. E. Dodge

preferred hemp seeds and chopped nuts at the shelf and seemed especially fond of the suet. They also drank the water frequently, and in general appeared to be so much at home that I often thought how nice it would be if they would stay to nest, instead of leaving for the North in the spring. However, I hardly expected that my wish would come true, because I knew that they were birds of the Canadian Zone, and that there were but few records of the species having bred in eastern Massachusetts.

Therefore, I was delighted when, on April 10, I noticed a female Red-breast carrying nesting material into one of my bird-boxes. This is a Berlepsch box, size No. 2, made by the Audubon Bird House Co., of Meriden, N. H. The entrance hole is one and one-eighth inches in diameter, and the box, which is made of yellow birch, is placed in a white birch tree about seven feet from the ground. It was put up in the hope of attracting Chickadees.

I did not see the male Nuthatch at work until April 16, when I observed him carrying shreds of bark which he pulled from the trunks and limbs of red

cedars (*Juniperus virginiana*) growing nearby. Examination of the box after the nesting-season showed that the nest was composed exclusively of this material, the box being filled to within an inch or two of the level of the entrance-hole. The male usually left his load at the hole, without entering, and I suppose that the material was put in place by the female inside.

On April 23, on my return home after a few days' absence, I saw the male fly to the box and feed the female who stuck her head out of the hole. I supposed that the incubating period had commenced, but on April 27 I saw more nesting material being carried, this time by the female. One of the photographs was taken with the idea of showing the male in the act of feeding the



RED-BREASTED NUTHATCH WITH FOOD FOR YOUNG

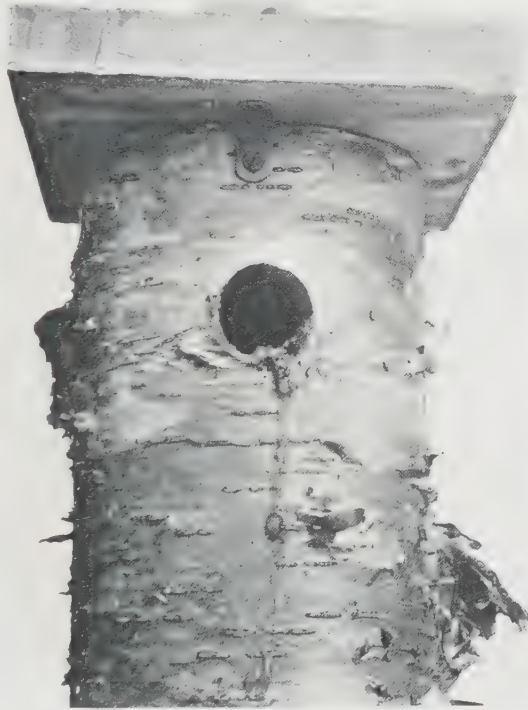
Photographed by E. H. Forbush

female, but unfortunately her head shows only indistinctly in the hole, while the male moved his head slightly so that the bill is somewhat blurred. I noticed this feeding process quite often during the nesting-period, and observed that frequently the female would fly out of the box as soon as she had received the food her mate had brought.

I had heard that the Red-breasted Nuthatch had the habit of surrounding its nesting-hole with pitch, so I was on the watch for it, and one morning, when the light was right, I saw that there was a thin layer of pitch close to the hole. At first this layer was so thin and transparent that it was noticeable only when the sun was shining on it at the right angle, but as the nesting-season advanced more and more pitch was added, so that before long it could be seen easily,

even at a considerable distance. Some of the pitch was later melted by the heat of the sun and ran down the front of the box in drops, which can clearly be seen in the accompanying photograph. This picture was taken immediately after the young birds had flown, when the box was taken down temporarily. The photograph also shows that most of the pitch was placed at the lower right-hand side of the hole, but there was, in addition, a thin layer which almost encircled the hole, but which was too nearly transparent to be visible in the picture. There was one place, however, at the lower left-hand side of the hole where the pitch was absent, and it was always at this point that the birds clung before entering the hole.

Naturally I hoped I might find some clue to the birds' purpose in putting on the pitch, but in this I was disappointed. Not only did I fail to observe the actual process of applying the pitch, but I was unable to see that its presence affected the movements of the birds in any way, except that they always entered the hole at the place where the pitch was absent. There was nothing to indicate that the pitch would be effective in keeping out enemies or in catching insects which might serve as food. I discussed this matter with Mr. C. J. Maynard, the naturalist, and he suggested that it might be a relic of some ancestral habit when, perhaps, the female may have been entirely sealed in during the nesting-period. In this connection he pointed out that at the present time there are certain species of Hornbills in Asia and Africa in which the females are plastered up in the nest by the males and are fed by the latter through a small hole. But whatever is the explanation in the case of the Red-breasted Nuthatch, it is a habit on which it would be well to have more information.



BERLEPSCH BOX USED BY RED-BREASTED NUTHATCHES SHOWING PITCH AROUND HOLE

Photographed by H. T. Shaw, Jr.

Naturally, I was very desirous that the birds should not be in any way disturbed, at least until they had become thoroughly established in their new home. Therefore I made no attempt to see the eggs. But on May 22 I felt quite sure that the young had hatched, so I cautiously lifted the lid of the box, and looking in, saw a downy blackish mass, in which I could count seven yellow bills. I was careful to stay near the nest only a moment, but I discovered afterward that I need not have been so particular, for the old birds, especially the male, seemed to be quite unconcerned when I approached even to within ten feet or so of it.

The parents were now kept busy feeding their young, and I saw them bring winged insects, small green caterpillars, and suet. I was interested to find that the suet apparently formed a considerable proportion of the young birds' diet, and I saw the parents make many trips from the suet-holders to the nest, a distance of some fifty yards. The birds would generally make two or three trips to the suet and then go off for something else.

On June 2, Mr. E. H. Forbush, State Ornithologist of Massachusetts, came out to take some photographs. He looked into the nest and could see at least six young birds which seemed to be about ready to fly. They were still in the nest on June 4, but on the morning of June 5 the box was empty. We discovered some of the young birds in pine trees not far away and found that they were active and could fly well. In fact they closely resembled the adults except for being lighter in color.

Several times during the next few days I saw some of the young birds perched close to the suet, being fed with it by one of their parents. And in less than ten days after the young had left the nest I saw two of them picking at it unaided.

The Nuthatches remained in the vicinity until some time in August, but I have not seen them at all during the last six months. It will be interesting to see whether or not any of them return in the spring to nest.

As far as I have yet been able to ascertain, this is the first record of the Red-breasted Nuthatch having nested in a bird-box and I would be glad to know if any other cases have ever been reported.

I never heard the Nuthatches give any "song" other than their usual nasal notes, but during the breeding-season they frequently indulged in low conversational twitterings, which were both pleasing and expressive.





MOURNING DOVE
Photographed by Elton Perry in Texas

Notes on the Plumage of North American Birds

THIRTY-EIGHTH PAPER

By FRANK M. CHAPMAN

(See frontispiece)

Sage Thrasher (*Oroscoptes montanus*, Fig. 1).—In nestling or juvenal plumage the Sage Thrasher is streaked above as well as below, and the ground-color of the upperparts is browner, but after the postjuvenal molt young and old birds are indistinguishable.

There is no sexual difference in the plumages of this species, and summer specimens differ from winter ones only in being somewhat more sharply streaked and less buffy below, and in lacking the whitish margins to the inner wing-feathers. There are no geographical races of the Sage Thrasher.

Mockingbird (*Mimus polyglottos*, Fig. 2).—When it leaves the nest the Mockingbird bears a general resemblance to its parents, but the breast and sides are thickly spotted with dusky and the upperparts are browner. At the postjuvenal molt these differences disappear and in its first winter plumage the young of the preceding summer cannot be distinguished from older birds. There is no spring molt, and summer plumage differs from winter plumage only in being grayer and more worn.

The male Mockingbird usually has slightly more white in the wings and tail than the female, but the difference is not sufficient to permit of the identification of the sexes in life.

Two forms of the Mockingbird are found in the United States. The Eastern Mockingbird (*M. p. polyglottos*) ranges west to eastern Nebraska and eastern Texas; the Western Mockingbird (*M. p. leucopterus*) is found from the western limit of the range of the eastern race westward to the Pacific. These two forms very closely resemble one another, but the western bird is slightly paler above and more buffy below.

Catbird (*Dumetella carolinensis*, Fig. 3).—The plumage of the Catbird is essentially alike in both sexes and at all seasons. The nestling is duller throughout and the lower tail-coverts are paler, but these slight differences disappear with the postjuvenal molt. Some females have the crown and upperparts slightly browner than in the male but they vary too little to make the sexes certainly distinguishable. The Catbird shows no geographic variation throughout its wide range.

Brown Thrasher (*Toxostoma rufum*, Fig. 4).—The plumage of the Brown Thrasher is alike in both sexes; the young birds closely resemble their parents, and there are practically no seasonal variations in color. The nestling has more or less dusky in the upperparts and, as usual with young birds, the streaks below are less distinct than on the adult, but with the postjuvenal molt these differences are lost, and for the remainder of its life a Brown Thrasher does not differ materially from our figure.

Notes from Field and Study

Notes from Phillipston, Mass.

The 'Gardner News,' of Worcester County, Mass., records Evening Grosbeaks at Templeton, February 5. In the afternoon of the same day a flock was seen on Phillipston Common where there are numerous maple trees. The distance between the two places is about four miles. It is not improbable that it was the same flock seen on Templeton Common.

I saw a pair of Golden-crowned Kinglets, January 25. There is no record of their having been seen before in this locality during the winter months.

Last summer a pair of Traill's Flycatchers were observed for the first time, and a parent bird was seen with a young bird in the act of feeding it. But for the alarm-notes I might not have detected either.

A pair of Juncos reared a brood here which is the first record of their being summer residents in this immediate locality. Crows are great disturbers of birds in the country during nesting-time. Last spring twenty crows were counted upon an apple tree about an eighth of a mile from this residence. They doubtless take great numbers of fledglings and eggs. Robins have to use their utmost ingenuity and care in selecting a nesting-site. Last year a pair of Robins built their nest in an oil-can, which was on a shelf in one corner near the roof of a steam mill, to escape the Crows that are abundant every year and perhaps more common than usual during 1915. It is no wonder that there is a scarcity of birds in this region when we realize the depredations of the Crows and the Sharp-shinned Hawk. I do believe, from my own experience, that the latter take two-thirds of the Robins that leave their nests. If an educated person who could identify Hawks and distinguish between the different species were engaged by this state to look after the welfare of insectivorous birds in the country

during nesting-time, keeping the Sharp-shinned Hawk and troublesome Crows in abeyance, there would be vastly more birds and they would have a happier and more comfortable time.—MRS. MYRA DUNN, *Athol, Mass.*

Winter Notes from Southern Connecticut

Though the past winter has been the most severe in forty years, there has been a scarcity of winter birds, and only an occasional rare bird from the North, but a number of unusual records for this section.

A Chipping Sparrow and a Mourning Dove have fed regularly from the same place in a yard at Norwalk all winter. Black-crowned Night Herons have wintered at Norwalk and at Fairfield, and at the latter place I saw four, one adult and three immature birds, in the spruces in Mrs. Wright's yard the morning of February 25, and these birds have visited the little stream in Birdcraft Sanctuary nightly.

One was brought to me on February 24, having been picked up under a shed and evidently frozen, and it is mounted and in Birdcraft Museum.

These birds are not given in the 'Birds of Connecticut' after November 17.

December 26, three Pine Grosbeaks were seen at Fairfield, and the next day were in Birdcraft grounds, just a day late for the Christmas census.

The last of February I was told of a bird at Bridgeport that puzzled those who had watched it all winter, and, on March 3, I went and found it to be a Mockingbird, and that it had been about Laurel and North Avenue all winter.

March 3, a flock of eight Evening Grosbeaks was reported to me from Norwalk, and on March 8 one male was reported in the same place and fine observations made. The same day a small flock of Redpolls was reported.—WILBUR F. SMITH, *South Norwalk, Conn.*

A Nest Census

During the breeding-season of 1915, my friend, Robert Hatt, and I kept a record of the nests found in our vicinity. Most of these nests were noted in a tract of land about fifteen miles long and two miles wide. The nesting-season extended from April to August and we noted probably half of the nests built during this time.

To do this we kept a notebook in which we noted each nest as it was found. We took many trips into the country and around the farm for this purpose. The Killdeer nests we found close to the stalks of young corn while plowing it. Some of the Doves' nests were found to be but hollows in the ground, while the Phœbes' were all under bridges. The Blue Jays and Robins nested around the house and it was hard work to keep the cats and Crows from their nests.

We found this a very interesting way to study birds as it teaches one just where to hunt for each kind. The first nest found in the season was a Bluebird's in a house I had put up. It was on April 10. The last found, a Dove's on August 25, was in an apple tree.

The following is the list of nests with the number of nests of each species. We did not count English Sparrows' nests or Cowbirds' eggs.

Species	No. of nests
Spotted Sandpiper	1
Killdeer	5
Bob-white	3
Prairie Chicken	1
Mourning Dove	19
Sparrow Hawk	3
Yellow- or Black-billed Cuckoo	3
Belted Kingfisher	2
Red-headed Woodpecker	28
Flicker	10
Chimney Swift	4
Kingbird	5
Crested Flycatcher	3
Phœbe	5
Blue Jay	11
Crow	8
Bobolink	1
Red-winged Blackbird	27

Species	No. of nests
Meadowlark	17
Orchard Oriole	2
Baltimore Oriole	6
Purple Grackle	4
Chipping Sparrow	1
Field Sparrow	2
Song Sparrow	1
Towhee	4
Cardinal	3
Indigo Bunting	4
Dickcissel	1
Purple Martin	34
Barn Swallow	6
Bank Swallow	16
Loggerhead Shrike	3
Catbird	16
Brown Thrasher	27
Bewick's Wren	2
House Wren	5
Tufted Titmouse	10
Robin	42
Bluebird	10

Total, 40 species, 364 nests.

—SAMUEL G. MEIGS, *Lafayette, Ind.*

Spotted Sandpipers

Two members of a bird-club went to a small pond one day to look for water-birds. As they drew near they noticed a Sandpiper, which instead of flying away hung around for some time giving a certain call. One of the girls said: "I believe that Sandpiper has some babies here!"

Not a sign of the young ones could be seen, however, so they sat down on the bank to watch. Just then the Sandpiper swam to the farther side of the pond and began to call a different note over and over. Suddenly the grass moved at their feet on the edge of the pond, and out popped a little Sandpiper baby not so large as a newly-hatched chicken! Such a tiny, fluffy ball! It teetered along through the grass till it came to the water, and then one of the girls exclaimed: "That tiny thing can never swim to its mother—it will surely drown!" But in it went, and swim it did, and reached its mother safe and sound. Then the mother called again, and at once *another* little baby appeared

at their feet, and paddled off to her. Still another call brought the third obedient child, and then the fourth, and last, went to her. The part that was most surprising to the girls was the fact that not one bird was to be seen till the mother called a *different* note, and especially, that they all went *one at a time*. Not one chick started out of the grass till the one ahead had swum across, and the mother had called again!—ALICE SAGE ALLYN, *Middle-town, Conn.*

Occurrence of Starlings in Dorchester County, Md.

The Starlings first made their appearance in this locality (southern Maryland), so far as I am aware, on February 14, 1916. A large flock of at least seventy-five individuals were noted and again observed the two following days, the 15th and 16th. The 14th was without question the coldest day of the winter, the ground being covered with snow, which was drifting in huge banks before a heavy northeast gale. Under these tempestuous conditions the Starlings were observed to feed in close flocks in the few wind-swept places of the fields. After feeding they would alight on the roof of the outbuildings or a sheltered tree and there enjoy the sunshine out of the biting blast.—RALPH W. JACKSON, *R. F. D. No. 1, Cambridge, Md.*

Can the Starling Rule Birdland?

Concerning the English Starling I have learned enough to distress the lover of wild birds. This imported prodigy seemed to have singled out my father's land as the first spot in the neighborhood on which to establish itself. Two pairs came about five years ago and built in maple hollows near the stables. Incidentally, let me say with anything but sorrow, that to do this they drove out two rowdy families of English Sparrows.

There was a tall buttonball tree on the hill nearby in which there were eleven holes drilled by Flickers and two others caused by limb-decay. In these lived

Flickers, Wrens, Sparrows, and Sparrow Hawks in happy disregard of each other until the Starlings found them out, and for the following year joyfully took two of the best sites. There were then, by actual count, two pairs of Starlings, four pairs of Flickers, one pair of Sparrow Hawks, and two pairs of English Sparrows nesting in that fine old tree, several Flickers having apparently already been driven away. The next year there were at least five pairs of Starlings while the Flickers had dwindled to two pairs. For the last two years there have been only sharp Starling heads sticking out of those holes bored with such exertion by the fine Flicker tribe, and instead of grubs, cherries are borne in increasing numbers to the nestlings.

Not only there, but in all the old trees about the buildings, holes have been taken over by this bird-pest who has now entirely eliminated from the orchard Bluebirds and Crested Flycatchers. His very presence seems also to discourage most other varieties of birds, for the place is now fast becoming one where the Crow, the Grackle, the Starling, and the English Sparrow alone enliven the scenery. And what songsters they are!

That the Flicker suffers most is shown by the way he has attempted to adopt inadequate bird-houses to his nesting needs. Two pairs enlarged the entrance-holes in empty Bluebird boxes only to find something unsatisfactory in each. Another tried hard to bore into a work-box placed on a telephone-pole near the house, and one in his zeal came down the chimney in my bedroom.

I have found the Starling very difficult to trap but comparatively easy to shoot. However, the more I have shot the more have come; so I see little relief ahead and can only feel grave fear that the Starling will soon rule all settled districts in this state.—JOSEPH W. LIPPINCOTT, *Bethayres, Pa.*

A Singing Blue Jay

Though the Blue Jay has the reputation of being "both a mimic and a ventriloquist," I personally have never before

heard him perform as remarkably as he did today, (March 28, 1916). The song of the particular Jay to which I have just been listening reminded me strikingly of that of the Mockingbird—though neither so loud nor so sweet nor so varied as the Mockingbird's song at its best. Interspersed with various common notes characteristic of the Jay, I thought I recognized imitations of the Flicker, Goldfinch, Catbird, and Ruby-crowned Kinglet, besides others, possibly, not so easily to be distinguished. This experience was to me so novel that a record of it may perhaps be of interest to your readers.—R. E. ROBBINS, *Brookline, Mass.*

Notes on Warblers

Because of a peculiar fondness for the Warblers the writer has been accustomed for several years to make a summary at the end of each year of this family of birds observed by him. In connection with the article on the 'Destruction of Warblers' in a recent BIRD-LORE he ventures to make a digest of some of his observations as a contribution to this subject.

While 30 different species have been seen in Williamstown by the writer, during the migrating periods for the last thirteen years, not more than 19 have been noted in a single year. The number of different species seen in the spring for the years 1908-1915 inclusive, for which a more accurate account has been kept, are 9, 19, 5, 8, 19, 6, 10, and 15 respectively. From this it will be seen that there was a distinct falling off after a year in which they were common.

The year 1909 was by all odds the great Warbler year in this locality. Not only were a goodly number of species observed during the spring migration, but also there were literally thousands of birds here. The trees and yards in the town were swarming with them. They were absolutely fearless, spying all about the houses in their busy search for food. Many instances were reported where they had even invaded buildings where windows were open. They could be approached to within

a few feet as they flitted about the shrubbery and fences along the public walks in every part of the town. One morning, upon looking out of a window at a bush growing nearby, twelve Warblers, of which five were different species, were seen at one glance. This lasted for about a week.

While this great migration brought joy to all nearby bird-lovers, yet it had its tragic side, for many were reported killed by dashing against windows which gave a strong reflection of nearby trees; and the all-too-prevalent cats destroyed a large number.

The year 1912 showed the same number of species, but the number of individual birds seen was nothing to compare with the former year.

The year 1915 has been very unusual in that the common Warblers were rare, and, conversely, the rare ones were rather common, chief of which were the Cape May which, during the spring migration, was the most common of any of the Warblers, and in the autumn the rare Black-poll was very common. The Myrtle, which is always very common in the spring, was very rarely seen last spring, but was more common in the fall than ever before, being here from the last of August to the middle of October. The Chestnut-sided, which is common here, was very rare this year, as was also the Black-throated Blue, the Black-throated Green, the Magnolia, the Yellow-throated, and the Redstart. This was also true of those that nest in this vicinity.—W. J. CARTWRIGHT, *Williamstown, Mass.*

Bohemian Waxwings in Southern Wisconsin

It is a pleasure to me to be able to record the visit of a flock of nineteen Bohemian Waxwings, which I had excellent opportunity to observe on the afternoon of March 25, 1916.

There was no possibility of mistaking them for the Cedar Waxwings, for the yellow markings on the wings were plainly visible as they perched almost motionless

in the low apple and elm trees bordering the walk. The pronounced gray tone of their plumage, different from the brownish tint of the Cedar Waxwings was another proof.

While on the wing and when in the trees they uttered lisping, hissing whistles, a sound not unpleasing to the ear when given in unison by the entire flock. They seemed quite tame, apparently paying no attention to me though I was within a few feet of them.

Suddenly as though at a given signal, the entire company took wing and disappeared in a northeasterly direction over the town.—ETHEL ALLIS NOTT, *Reedsburg, Wis.*

Do Cliff Swallows Ever Build on Painted Barns?

The fact that the author of this article, in a wide experience covering an area from Maine to Minnesota and southward to the Gulf of Mexico, never has observed the Cliff (or Lake) Swallow nesting in colonies under the eaves of painted barns, has given rise to the query in the above title. Once only I have noted a single pair that built under the gable of a painted building—the dining-hall of Proctor Academy in Andover, N. H. The following year these birds failed to nest there.

I frequently visit a line of back-country towns in Washington County, Maine. I cannot recollect a single painted barn in these towns, and the Cliff Swallows nest on most of the barns there. They swarm everywhere, plastering their curious bottle-shaped houses well under the projecting eaves. The abundance of these birds is remarkable. In the nearby shire town, where ready money is more prevalent, and painted barns prevail, I cannot recollect a single colony built on such structures, though the birds breed freely on the unpainted buildings in the town. Painted barns are almost universal in southern New Hampshire. Cliff Swallows are as scarce as the proverbial 'hen's teeth.' I have noted just two colonies in our state this year, both built on unpainted barns.

Do the birds prefer an unpainted building because it resembles the color of a cliff, or does paint prevent the mud from adhering with sufficient strength to support the structure and the growing brood? Perhaps both reasons are factors.

An interesting incident is illuminating here. A few weeks ago, while delivering an illustrated lecture in a country town, I cited the above views about the nesting of the Cliff Swallow. I also observed that no one could be sure that birds always observed the same rules, and requested anyone in the audience who might know of this bird building on a painted barn to please let me know of the fact. After the lecture a man came forward and told me of a painted barn close by, that, according to him, harbored a colony of Cliff Swallows. The next morning I made due investigation, but not a trace of any birds could I find. Inquiry at the farmhouse, however, elicited the information that the birds formerly nested there, but *had left since the barn had been painted*. Can anybody shed any further light upon this matter?

I would like to give a hint to those who may have these beautiful and beneficial Swallows about their buildings. The same will apply to the Barn Swallows. I have an uncle who loves birds and does all he can to attract them about his house. Every spring, when the Swallows arrive, he digs a quantity of clay from the lake, and close to the barn mixes it to the proper consistency in a shallow bed. The birds stand about so close he can almost touch them, awaiting their chance. On stepping aside, they eagerly attack the plastic clay, filling their beaks and flying to the barn, where they build scores of nests. Many hundreds of Swallows are reared in and upon the old building. Their merry twitter makes the old place lively. They amply repay their host, sweeping the air clean of mosquitos and other flying insects, making life enduring in a country mosquito-infested as are few regions in New England.—MANLEY B. TOWNSEND, *Nashua, N. H.*

An Unusually Colored Chickadee

I inclose herein a photo of a unique Chickadee, its sides being boldly colored a dull black. As shown, the whole of sides are thus colored, leaving but a narrow streak of usual color along breast and abdomen.

This Chickadee was first observed feed-

I presume it is merely an unusually marked Chickadee.—C. F. STONE, *Branchport, N. Y.*

Nesting Habits of the Tufted Titmouse

I think I can explain the strange behavior of the Tufted Titmouse recorded in March-April, BIRD-LORE.



A BLACK-SIDED CHICKADEE

Photographed by C. F. Stone, Branchport, N. Y.

ing on my roof bird-garden on March 12, since when I have observed him several times. This particular bird has a retiring disposition, for while dozens of Chickadees feed daily on my roof-garden, he rarely visits the stubs and so far he has been alone. I have observed this black-sided Chickadee several times in different sections of the street and he was always alone.

These birds, which my father has often seen in the South, line their nests with a pulpy substance not unlike a sponge. They carry a large number of these damp leaf-balls to their nest-hole and there pull them into shreds. I do not know whether they use their claws and bills for this or not. The Titmouse uses this sort of lining for its nest only when they build in damp weather. They do not seem to be able to

use dry leaves in this manner.—FRED A. L. HOOD, *Hudson, Ohio.*

A Winter Ruby-crown

On February 5, 1916, a Ruby-crowned Kinglet appeared on the window-sill of a second-story window, a suet feeding-station, since which time we have seen three, at least, repeatedly. One of these is apparently a female without a trace of color on her head, another apparently a young male with only a red feather or two, and the third a male in full plumage.

At first they were very shy, but they have become as tame as the Downies. You can imagine that we have had great pleasure in their visits.

Although we put nuts and crumbs out at different times, we never saw them eat anything but suet.

I have not seen them since the warm weather came, but I shall look for them again in case the ground becomes covered with snow.

My class, which is studying birds, and our former students, enjoy BIRD-LORE, which is often quoted.—(Miss) IDA L. REVELEY, *Professor of Biology, Wells College, Aurora, N. Y.*

Robins at Home

On April 15, 1915, I discovered a Robin's nest which owing to its rather unusual location seems of interest. It was situated about three and one-half feet from the ground in the fork of a split post in an open vineyard. The nest was fully complete when discovered, though I had passed the spot daily, and April 12 I had inspected the post carefully. It was a characteristic Robin's nest of twigs and grass, the usual mud rim and a lining of grass. A piece of white paper formed the foundation and was plainly visible from two sides.

The first egg was laid between 10 and 11.15 A.M., April 16, the second during the morning of April 17, the third between 10 A.M. and 6 P.M., April 18. From that time the female was on the nest whenever it was visited until noon April 21 when it

contained four eggs. Incubation apparently began April 18 or 19.

The nest was visited from time to time until May 1, and always contained four eggs. As I was away from May 1 until May 7 my next visit was on that date at which time I found four downy Robins apparently one day old. The young grew rapidly and on May 13 were fully feathered



A ROBIN'S HOME

and on the 14th one had left the nest (was seen near); and the remaining three were seen to fly.

The accompanying photo was taken May 10, and shows the female and the heads of the two young. It was taken at six feet and as we had become well acquainted I had to wait only ten minutes after setting up my camera.—DRURY L. FISH, M. D., *Kankakee, Ill.*

Evening Grosbeak in Northern New England

Never have I known the Evening Grosbeaks to be so abundant in northern New England as they are this winter. February 29, I found a flock of four at Woodsville, N. H., feeding on mountain ash berries. The following week, at Hanover, N. H., I observed a flock of seven eating sunflower seeds at a feeding-station. March 14, when in Lebanon, N. H., I found a flock of thirty-six. A flock of thirty is reported from Meriden, N. H., another flock from Concord, N. H., and three individuals from Nashua, N. H. Reports have come to me of these birds having been noted at Dorchester, Milton, Brookline, and Lexington, Mass., and at Westbrook, Maine. I noted that the birds I observed at Hanover and Lebanon, N. H., were first attracted by the fruits on the box-elder or ash-leaved maple trees (a food upon which these birds largely feed in the West) and that when this supply was exhausted they were induced to remain for weeks by sunflower seeds offered in feeding-boxes and on shelves at windows.—MANLEY B. TOWNSEND, *Nashua, N. H.*

Evening Grosbeak in Maine

Bird-lovers in Lewiston, Maine, and vicinity have been having unusual and interesting experiences with Evening Grosbeaks. Two years ago, several visited different sections, but last winter none were here. December 31, this winter, one immature male appeared in one of the trees on one of the side streets of the city. In a few days, flocks of eight were reported in different places. Occasionally they would stop three or four hours, but usually they would feed a short time and fly away, making it impossible for those who were anxious to see them to reach the place before they had gone. As soon as a bird-lover would see them telephones would be busy till all were notified. The last two weeks in January a flock of seventeen visited a lawn in the suburbs every morning.

The ground was bare, as we had had mild weather, and they fed on seeds that had fallen from what the people called a linden tree. Then a little snow came and they disappeared. When the lawn was bare again, the flock returned, increased to thirty-five or more. Since snow came in February small flocks of individuals are seen about the residential sections of the city. A beautiful male comes to one place every day and feeds on the sumach. The immature males and females far outnumber the adult males. Nearly every bird-lover has seen them this winter. Flocks have been reported in South Paris, Farmington, Rangeley, and Winthrop.

On February 17, four Prairie Horned Larks were seen in Auburn, our sister city. This is earlier than usual, as they appear most years on February 22. One year they were seen as early as February 9, while last year March 4 was the earliest record. We consider these our first birds to arrive on the spring migration.—CARRIE ELLA MILLER, *Lewiston, Maine.*

Evening Grosbeak in New Brunswick

A new arrival has been seen of late (February 28, 1916) in small flocks about the town, feeding on fruits of the various trees, preferably box-elder and crab-apple. Their beautiful coloring, bright yellow and black, has attracted much attention. Even people who are most disinterested in birds have been attracted by another feature, and that is their utter disregard of the presence of man. Without the slightest difficulty one can come within very close range and thus obtain a good view of plumage and habits.

These birds are Evening Grosbeaks, and this is the first record we have of their ever visiting the province of New Brunswick.—HELEN V. BURNETT, *St. Stephen, Charlotte County, New Brunswick.*

Evening Grosbeak in Vermont

As visits of Evening Grosbeaks to New England are of such special interest, I send this account of their occurrence in St.

Johnsbury, Vermont, hoping there will be other accounts of them in the next issue of BIRD-LORE.

On the morning of January 20, I saw a pair of Evening Grosbeaks feeding in an ash-leaved maple. The birds enjoyed a long breakfast hour in this tree, and I was able to spread the news of their arrival to other bird-lovers in town, several of whom went to see them. The next two days the pair were in the ash-leaved maples in that same place each morning or noon. Not passing the trees at the usual time on the 23rd, I did not see the birds at all that day, but on the 24th, at noon, the female was again eating in the favorite tree.

We tried to trace the movements of these birds through the bird-students who co-operate with the Museum in making bird-observations, but they seemed to be seen only when feeding in that locality. At a farm about five miles north of our village, some birds were reported to us as being "different from anything seen before" and from the description added we think they were a small flock of Evening Grosbeaks.

This pair apparently reported the supply of food to others of their kind for after a little over two weeks—on February 10, a flock of ten to twelve were feeding in this same group of box elders when I passed at noon. The males in the noon-day winter sunshine were most beautiful. —MABEL A. SHIELDS, *Assistant, The Fairbanks Museum of National Service, at St. Johnsbury, Vt.*

Evening Grosbeak at Exeter, N. H.

Evening Grosbeaks have been observed in this town every two or three years in small flocks, I have been told on good authority; but it has never been my good fortune to see any until the morning of April 3. I was attracted by the unfamiliar sound of their call-notes, a sort of metallic klink, and saw a flock of nine or ten. There were two or three males in brilliant plumage among the number and about as many with considerable yellow. The rest were evidently females.

Again on the 11th I saw in the same

place what I took to be the same flock, and observed them for some time. At this time there was audible a fine singing as if one or more of them were amusing themselves with a "whisper song," but I could not positively trace the sound to any one of these beautiful birds. I am, however, quite confident that it was the singing of the Grosbeaks that I heard, for there were no other birds near. Besides this, the singing was not like that of any of our native birds.

During this winter and last a Pileated Woodpecker has spent his time in town. Last winter a Kingfisher remained through the whole season.—GEORGE H. SELLECK, *Exeter, N. H.*

Evening Grosbeak at Meriden, N. H.

We now (March 18, 1916) have a flock of over fifty Evening Grosbeaks feeding in the dooryards around the village, and their loud call-notes may be heard at all times throughout the day.

They have been here since early in February—only a few at first but gradually increasing in numbers. Some of them even enter the houses when a window is left open, with seed placed inside, and one of them fell into a waste-paper basket during a fight, when it was captured and 'banded.'

They have been reported from Hanover, N. H., Wells River and Hartland, Vt.

Early in March I saw one Horned Lark in a company of about fifteen Snow Buntings. They have also been seen in Hanover, N. H.—W. M. BUSWELL, *Meriden, N. H.*

The Evening Grosbeak at Williamstown, Mass.

The people in Berkshire County, Mass., had a rare opportunity to see a flock of Evening Grosbeaks, March 19. The younger bird-lovers had never seen them here, and the older ones look back over about twenty-five years to any previous visit of these beautiful birds. The winter here has been long and very severe with a greater snowfall than in any previous

year on record, and with no sign of spring up to the present. In fact, there is about two feet of snow on the ground with drifts up to ten or even twenty feet in the rural districts, so that the sight of these very rare and very beautiful birds came at a most welcome time. They were seen by many in different parts of the town, so there must have been quite a flock, but no real count was made. They were quite fearless. One was observed by the writer in his front yard where food was placed for birds, so a splendid opportunity was given to make a complete identification.

Another rare visitor has been the Snow Bunting, and the Starling has made its first appearance here this winter.—W. J. CARTWRIGHT, *Williamstown, Mass.*

Evening Grosbeak at Ashland, N. H.

On March 2, 1916, I observed two female Evening Grosbeaks feeding in some sugar maples, and later in sumac bushes, in the center of the village of Ashland, N. H. As this is the only New Hampshire record I have heard of this winter, I take pleasure in reporting it to BIRD-LORE.—JOHN B. MAY, *Waban, Mass.*

Evening Grosbeak at Poughkeepsie, N. Y.

On Thursday afternoon, February 17, 1916, I observed and identified seven Evening Grosbeaks feeding on locust seeds at our farm just outside Poughkeepsie, N. Y.

I reported these to friends, and today, the 20th, I found them back again at 10.30 A.M. Today has been cold and snowing all day. The birds were here at intervals all day, and were last seen at 3.50 P.M.

Mr. Allen Trast, of Poughkeepsie, Professor Saunders and Professor Ellen Freeman, of Vassar College, as well as Miss Dean, a student there, saw and identified them at this appearance with me.

As these are all bird-students, and as I believe this is a record for Poughkeepsie and Dutchess County, I think it worth reporting.—GEORGE W. GRAY, *Poughkeepsie, N. Y.*

Evening Grosbeak in Rhode Island

I read with interest in the March-April, BIRD-LORE the accounts of the appearance of the Evening Grosbeaks in Massachusetts, Vermont, New York, and Connecticut; but notice that no one has reported them from Rhode Island.

On April 31, 1916, the writer, in company with Mr. Harvey Perry of Westerly, R. I., saw a flock of seven Evening Grosbeaks (two males and five females) in Wilcox Park, Westerly. The flock remained several days and two females were seen as late as April 2.—HARRY B. AGARD, *Westerly, R. I.*

The Evening Grosbeak at Clinton, N. Y.

The notes on Evening Grosbeaks in BIRD-LORE for March-April move me to write you that a flock of these birds have been visitors in this village for some time this winter.

About a month ago, I saw a flock of, perhaps, ten that flew past me and into a large, tall tree about twenty yards away.

I have seen several pictures of them, and recall to memory those in 'Birds and All Nature,' 'Birds of Michigan,' and L. A. Fuertes plate in 'Birds of New York.'

I have never seen any before this winter, but I had heard of this flock some weeks before seeing it; have not seen them since.—JOHN THOMPSON, *Clinton, N. Y.*, April 10, 1916.

Evening Grosbeak at Newburyport, Mass.

On Wednesday, March 22, and the Thursday and Friday following, there appeared in this city a flock of Evening Grosbeaks. They came at the same time as the storm of that date and have left within the week.

They numbered from twenty to thirty and were positively identified, male and female. It is interesting to note that they were tame enough to stay all day in a hedge situated between a school-building and a church. They fed on the buds of

the hedge as they dropped the bud-shells on the ground beneath.

The coloring of the male was very vivid, noticeable against the snow and the dark branches. The black-and-white markings against the green body made him easy to distinguish.

The female was gray and white with no signs of olive-green. They outnumbered the males considerably.

I should be interested to know if they were seen in any other New England towns.—MARION H. BAYLEY, *Newburyport, Mass.*

Evening Grosbeak in New York City and Utica, N. Y.

I should like to report the appearance of a female Evening Grosbeak in the New York Zoological Park, on February 15, 1916. The bird, which was quite alone, was feeding on cedar berries and the green tips of the twigs. As usual, she was fearless and easily approached. I am not aware of a previous record of the species in New York City, aside from Staten Island.

Mr. George W. Weston, of Utica, N. Y., informs me that on March 21, 1916, he observed six Evening Grosbeaks feeding on the ground near one of the main streets and within the city limits.—LEE S. CRANDALL.

The Evening Grosbeak in Greater New York City

Though there are a number of records of the occurrence of the Evening Grosbeak in New York State, chiefly in the central, western, and northwestern parts, there seems to be but one possibility that it has ever before been observed in New York City. In a catalogue of birds observed in New York, Long Island, Staten Island, and adjacent parts of New Jersey, George N. Lawrence, in the *Ann. Lyc. Nat. Hist.*, 1866, pp. 279-300, lists it merely as rare and gives no specific locality. A more recent observation is that made at Plainfield, N. J., in 1914, by Waldron DeWitt Miller, (*BIRD-LORE*, April, 1911; Vol. XIII,

p. 95). It is highly gratifying then to report the first definite record for New York City which was made at 3.30 P.M. on Sunday, January 9, 1916, by the writer and Theo. L. Herman.

About a half mile southwest of Castleton Corners, Staten Island, is a section of country partially cleared by a real estate company, but still supporting a growth of scrub white oak, green briars, birches, and the usual characteristics of land left to survive abuse. The leaves of the scrub oaks are crisped and curled into bunches at the top, and the rattling of these leaves first drew attention to the presence of the birds, which proved to be a fine male and female Evening Grosbeak. It was easy to get within eight or ten feet of the birds at any time, so unsuspecting were they, and it would have been reasonably possible to knock one down with a stick. The only calls, rather short whistling notes, were given by the male, and he was especially conservative in this respect.

On the following morning the birds were again observed in the same vicinity and in practically the same place, but did nothing of peculiar interest. Rain kept the birds from their normal routine and made things disagreeable in every way for further observation. On the three following days the birds could not be found and doubtless left the locality, though a nearby pine grove offered an excellent roost. At this time it was supposed that the Grosbeaks might have gone to the Moravian Cemetery at New Dorp, three miles away, where an extensive pine grove offered suitable cover; but frequent trips revealed nothing there. Not until March 12; did the unexpected happen. Mr. Howard H. Cleaves, Mr. Theo. L. Herman, and the writer were photographing birds in the cemetery when Mr. Cleaves discovered the female Evening Grosbeak in an oak tree. She soon departed but returned later with the male and together they fed on the buds of a white maple. Here they stayed but a minute when they became alarmed and flew away, each giving a soft whistle.—HAROLD K. DECKER, *Staten Island, N. Y.*



THE NEST AS THE PHEASANT CONCEALED IT



THE NEST AS THE PHOTOGRAPHER REVEALED IT
Two Pheasant Photographs by Arthur A. Allen, Ithaca, N. Y.

Book News and Reviews

LITTLE BIRD BLUE. By WILLIAM L. and IRENE FINLEY. With illustrations by R. Bruce Horsfall and from photographs. Boston and New York. Houghton, Mifflin Company, 1915. 60 pages, numerous half-tones. Price 75 cents.

The authors of this little volume know both birds and children, and they interweave the strands of their story of bird-life and child-life in a way which should make a bird-lover of every child who reads it. We know of no better 'first book of birds.' F. M. C.

THE WINTER BIRD-LIFE OF MINNESOTA. By THOMAS S. ROBERTS, M.D., Ornithologist to the Department of Animal Biology, University of Minnesota and Associate Director of the Zoölogical Division of the Geological and Natural History Survey of Minnesota. Occasional Papers of the Zoölogical Division of the Geological and Natural History Survey of Minnesota. No. 1, Minneapolis, Minn., Feb. 1916. 4to, 20 pages, colored frontispiece, 13 half-tones.

This attractive-looking brochure is both authoritative and popular. It is therefore of equal value to the student who desires only its contained information on distribution for faunal purposes, as well as to the local bird-lover who would know when and where to look for birds during the winter in Minnesota, and how to identify those found. In addition to notes on times of occurrence, relative numbers, and field characters there is also more or less information in regard to habits.

Ninety-one species and subspecies are treated. Of these thirty-five are classed as Permanent Residents, seventeen as Winter Visitors, eleven as Half-Hardy Winter Visitors, and twenty-seven as Accidental.

The illustrations include a number of reproductions of interesting photographs from nature and a colored frontispiece of the Evening Grosbeak.

Publications of this kind are well designed to promote interest in local bird-study, and to bring their author in touch with field-workers throughout the

area covered. Indeed, Dr. Roberts states that "one of the considerations in presenting this paper on our winter birds is the hope that it will bring to the Natural History Survey much additional information in regard to the bird-life of the State." Dr. Roberts may be addressed at the Zoölogical Museum, University of Minnesota, Minneapolis.—F. M. C.

IN A CHESHIRE GARDEN. By G. EGER-TON-WARBURTON, Rector of Warburton. Sherratt and Hughes, 34 Cross St., Manchester, England. 12mo, 117 pages, 7 half-tones. Price 65 cents.

These chapters on the birds of an English garden are pleasantly reminiscent of Gilbert White and Selborne. With our growing interest in bird-gardening, they should appeal to us as a record of the relations established between human-life and bird-life in a country where bird and man were intimately associated when our own land was still a primeval wilderness.—F. M. C.

BIRDS OF PORTO RICO. By ALEX WETMORE, Assistant Ornithologist, United States Department of Agriculture, Bulletin No. 325. Contributed from the Bureau of Biological Survey, Washington, March 24, 1916. 8vo, 140 pages, colored frontispiece, map, 7 half-tone plates. For sale by Superintendent of Documents, Washington, D. C. Price, 30 cents.

In response to a request from the Commissioners of Agriculture of Porto Rico, the Biological Survey sent Mr. Wetmore to Porto Rico to study the economic relations of its birds. Mr. Wetmore began his field-work on December 13, 1911, and continued it until September 11, 1912. During this time he gathered much information in regard to the bird-life of the island and 2,200 birds' stomachs. The contents of these stomachs having been determined, he now presents the results of his labors in field and laboratory in this report. It contains introductory sections

on the 'Physiography of Porto Rico' and its 'Bird-Life,' 'Methods of Increasing Birds,' 'Introduction of Birds' and an Annotated List of Species (pp. 17-129). In this list we have a thorough treatment of the status of the 162 species known from the area under consideration with remarks on their habits and as detailed a statement of their food as the data obtained warrants. The whole forms a most satisfactory memoir on Porto Rican bird-life and a unique contribution to our knowledge of the food-habits of tropical birds. A colored frontispiece and five full-page half-tones of Porto Rican birds, by Fuertes, add to the value of this publication.—F. M. C.

OUR DOORYARD FRIENDS. By SARA V. PRUESER. The Platform, Steinway Hall, Chicago, 1915. 12mo, 204 pages, 2 colored plates, 36 half-tones, 17 line-cuts.

Brand Whitlock, who writes an introduction to this little volume, confesses that in reading it he has been reproached by an ignorance of his own land; by a failure to realize "that there was so much of interest going on in it as Miss Prueser has discovered within a few yards of her own door." How often the nature-lover hears this same thought expressed by those who envy him the obvious resources he has discovered in the world immediately around him!

This invaluable knowledge of the animate forms about us cannot be acquired in a day. It grows with us, becomes part of us, and retains its power to add to the pleasure and sweetness of life long after our interest in more material things has vanished. Books like Miss Prueser's dealing with the birds of our dooryards are well designed to open the gate which may lead to the larger joys of the fields and forests lying beyond. She writes of the Chickadees, Nuthatches, and 'Downies,' Blue Jays, Phœbes, and Cardinals and other birds which meet us more than half-way when we extend the hand of friendship to the inhabitants of the feathered world and make us realize how much more they can add to our lives than we can to theirs.—F. M. C.

THE BIRD POEMS OF MILES A. DAVIS. Published by John White Johnston, Rochester, N. Y. Printed by the Roycrofters, East Aurora, N. Y., 1916. 16mo, 37 pages.

In this dainty booklet Mr. Davis pays his tribute in verse to the charms of bird-life. The Robin, the Bluebird, the Oriole, the Bobolink, and other familiar birds of garden and meadow arouse within him a poet's appreciation of their beauty of form and song; while the Wild Goose and Stormy Petrel stir his muse to eloquent expression of their mastery of the air or wide spaces of the sea.

Mr. T. Gilbert Pearson writes a sympathetic introduction to this collection of poems, which will, we are sure, find favor with all nature-lovers.—F. M. C.

The Ornithological Magazines

THE AUK.—In the April issue no less than three writers touch on Audubon and his work: Mr. J. E. Thayer under the title 'Auduboniana' presents to our notice four half-tones of original water-color drawings, with a couple of letters written in 1841; Mr. G. B. Grinnell also presents a couple of letters written in 1833, and Mr. S. N. Rhoads throws 'More Light on Audubon's Folio, Birds of America.'

Dr. W. M. Tyler takes up a neglected phase of bird-migration and writes on 'The Call-notes of Some Nocturnal Migrating Birds,' but there is hardly the mystery about the notes that he implies, for none of them are essentially other than those that may be heard by day. The striking call of the Olive-backed Thrush, for instance, may be commonly heard in the summer months on the northern breeding-grounds of the species.

The title 'Bird Watching and Biological Science' by Mr. J. S. Huxley, is a contribution to what might be called psychological ornithology. It is easy to become imbued with modern ideas, and there is a tendency among writers on this subject to think along in print rather than to present clear-cut conclusions. A molehill of fact is often made to produce a mountain of theory, and facts as stated by amateurs

need much verification by professionals before they can form a really secure basis for any abstract theory.

Of local lists there is one by Mr. W. W. Cooke, on Labrador, a continuation of Mr. Mousley's birds of Hatley, Quebec, and one by Mr. A. P. Smith on birds of Kerr County, Texas. Two New Forms of Petrels from the Bermudas *Æstelata cahow* and *Puffinus puffinus bermudæ* are described by Messrs. Nichols and Mowbray.

The 'Auk' closes with some controversial matters under 'Correspondence' and a brief obituary notice of Daniel Giraud Elliot, one of the most distinguished of the men who have adorned the science of ornithology.—J. D.

THE CONDOR.—The March number of 'The Condor' with seven general articles and twenty-eight illustrations presents an unusually varied and interesting series of subjects. A remarkable set of photographs of 'Sea Gulls at the Panama-Pacific International Exposition' taken by Joseph Mailliard shows the abundance and tameness of the half-dozen species of these birds which formed a characteristic feature of the exposition.

Mrs. Bailey's 'Birds of the Dakota Prairie' is continued with an account of the birds observed on the lakes. The White-winged Scoter, at its southernmost breeding-place on Stump Lake, N. D., naturally receives special attention, but the habits of the Black Tern, Franklin's Gull and several species of Ducks are also mentioned.

A unique account of the little-known 'Farallon Rails of San Diego County' is given by Huey, based on seven years of observation. Among several interesting facts may be mentioned that the birds seem to be resident in this region, that their food consists largely of an Isopod crustacean (*Alloniscus mirabilis*), that the number of eggs varies from 4 to 8, and the nesting dates extend from March 24 to May 25.

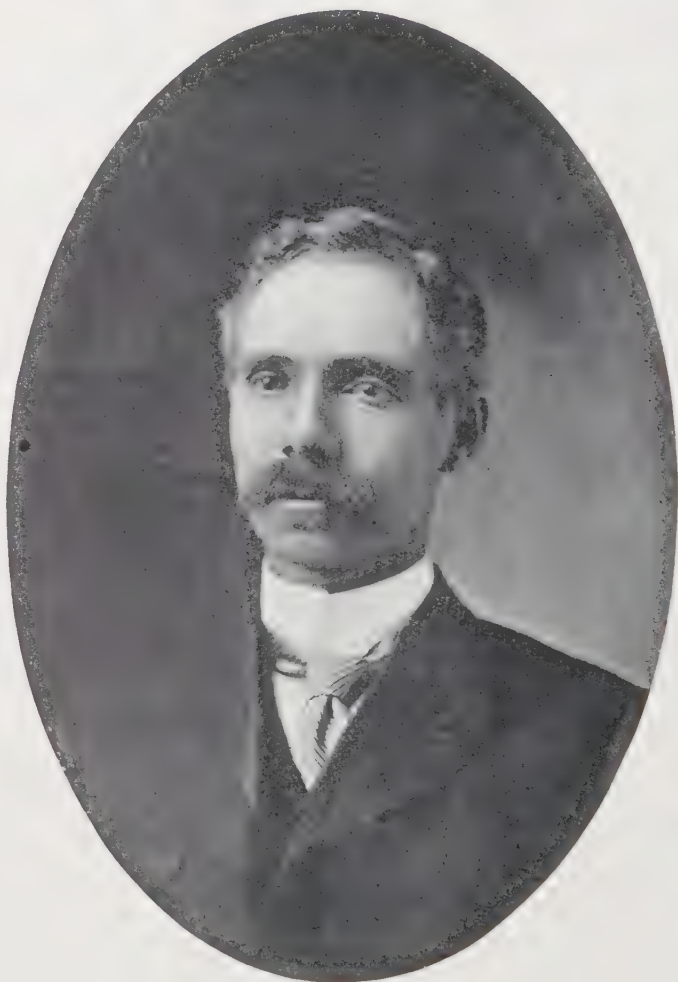
Two interesting life-history papers will

be found in M. P. Skinner's 'Nutcrackers of Yellowstone Park' and W. C. Newberry's 'Chapter in the Life History of the Wren Tit.' Skinner notes that Nutcrackers combine the peculiar habits of Woodpeckers, Crows, and Jays. They will eat anything, and in the Park "build their nests in February and bring forth their naked young in March, long before the snow has left the ground." The eggs are laid about March 1, and incubation lasts twenty-two days. The Wren-Tit, although an abundant bird in the hills about Berkeley, Calif., is so secretive in its nesting-habits that its eggs are seldom seen. In a nest under observation in 1915, the set of three eggs was completed April 2, the young hatched April 20, and left the nest May 6, indicating that incubation lasts eighteen days and the young remain in the nest only about sixteen days.

A local list comprising notes on 'Some Species of Land Birds of Tillamook County, Oregon,' is contributed by Jewett, based on observations made on eighty species during the last three years.

Howell contributes to the discussion of vernacular names a short note in the form of an objection to the term Audubon Canyon Wren as a substitute for Dotted Canyon Wren. He suggests instead the name Ridgway's Canyon Wren, in honor of the describer, with the explanation "why not be uniform and call the birds either after the describer, or as those gentlemen intended they should be named."

Under the caption 'The New Museum of Comparative Oölogy,' Dawson outlines an ambitious plan for a museum at Santa Barbara, Calif., which while giving special attention to Oölogy will be devoted to the advancement of ornithology in its broadest sense. The keynote of the new institution is cooperation and the plan which may require twenty-five years for its realization calls for the construction of buildings which will cost \$150,000 and an endowment fund of over half a million dollars.—T. S. P.



WELLS W. COOKE

Bird-Lore

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Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

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Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

WELLS W. COOKE

1858-1916

In the death of Wells W. Cooke at Washington, March 30, 1916, following an attack of pneumonia, not only his immediate friends and associates, but hundreds who knew him only by correspondence, experienced a deep sense of personal loss. Possibly no professional ornithologist had established closer relations between himself and amateur observers throughout the country than Professor Cooke. He was the father of the coöperative study of bird-migration in America. As early as 1881 we find him organizing local bird-students in the Mississippi Valley, and the 'Ornithologist and Oölogist' for a number of years contained reports of the records made by himself and his volunteers.

It was natural then that when the American Ornithologists' Union was founded in 1884, Cooke should be placed in charge of migration work in the region he had already made his own. It was equally natural that with the growth of the Division of Economic Ornithology and Mammalogy (now Biological Survey) of the Department of Agriculture, to which the migration and distribution investigations of the Union were entrusted, Cooke should be asked to join the Survey to assist in developing this phase of its work. From that date (June 1, 1901) to the day of his death, Cooke was identified with the

Survey. Never were man and opportunity better mated. For the past fifteen years, with undiminished enthusiasm, Cooke has devoted himself to gathering data in regard to the migration and distribution of North American birds. Many men would have been overwhelmed by the mere attempt to catalogue the enormous mass of published and unpublished records which Cooke classified. It is indicative of his unflagging persistence that having developed writer's cramp in his right hand, he trained himself to write with his left, and thereafter changed from one to another as occasion required.

But Cooke was not a mere accumulator of facts. They were only the bricks with which he erected the edifices which will always stand as monuments to his industry and clear thinking. The second publication of the (now) Biological Survey was his 'Bird Migration in the Mississippi Valley' (1888), and this has been followed by a series of special Bulletins on the migration of various families of North American birds and on the subject of migration, and by publications elsewhere.

For the past thirteen years practically every number of BIRD-LORE has contained a contribution by Professor Cooke. These papers present summarized tables of migrations throughout North America of the Warblers, Thrushes, Flycatchers, Vireos, Sparrows, and Kinglets, and contain admittedly the most valuable material published by this magazine.

Cooke's papers before the American Ornithologists' Union always contained something new, were clearly presented, and in their delivery their author unconsciously revealed that love for his subject which added so greatly to the attractiveness of his personality.

If anything can reconcile us to the taxing away of a man in his prime it is a knowledge of the fact that he has made the best use of the time allotted to him. Cooke cut a straight, clean swathe through the field of life, and with no loss of time or waste of effort garnered as full a harvest as the limit of his years allowed.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by ALICE HALL WALTER

Address all communications relative to the work of this department to the Editor, 67 Oriole Avenue, Providence, R. I.

TAKING A ROBIN CENSUS

In previous issues, various methods have been described of stimulating interest in bird-study not only in schools but also throughout civic centers. During the spring of 1915 a public-spirited business man in the city of Sterling, Illinois, undertook to awaken the people, and especially the school-children in his vicinity, to an appreciation of their bird-neighbors by conducting a Robin Census. Although elderly, occupied with cares, and handicapped by deafness, this man determined to pass on to others the joy of a knowledge of birds, a joy which had come to him late in life,—he writes: "I was fifty years old before I took great notice of birds,"—and accordingly he visited each of the three public schools of the city explaining his plan for taking a Robin Census in April. To quote his words: "The teachers and the boys fell in with it at once and there was much enthusiasm developed." Sterling lies along the north shore of Rock River and is about two miles from east to west, and one-half mile wide, making nearly a mile square, or 640 acres, fully covered with dwellings. Its population is nine or ten thousand.

The method employed in conducting the census was competitive. In each of the three public schools of the city a captain was named, under whom was a corps of young boys who did the counting, and reported the results to the captain. The count began at 5 A.M. when nearly all the Robins in the census area were on the ground feeding. Starting at the base of each avenue at the river, one boy on each side worked north to the city limits, in this way covering the area quite thoroughly. Making due allowance for errors in counting, the final result was thought to be a fair average since, while some birds may have been counted twice, it is probable that not every bird in the area was on the ground as the observer passed. The total count numbered 3,252 Robins. Mr. George P. Perry, the organizer of the census says that fully twice that number of Robins might have been seen in Sterling by June of the same year.

Of the three schools which took part in the census, Central School led with a record of 1,386 Robins; Lincoln School came next with 1,077, and Wallace School third, with 789. The largest single number recorded by any pupil was 164 and the smallest 18. Only four pupils observed over 100 Robins. Sixty-three boys took part in the contest. The interest created, however, extended far beyond the three schools immediately concerned, as the results of the census were printed in detail in one of the city papers, giving wide publicity

to this novel campaign. Reference has already been made to the Robin nest-census taken by pupils of the public schools of Worcester, Massachusetts, under the direction of Dr. C. F. Hodge. Bird-clubs and both Senior and Junior Audubon Societies can hardly do better than to follow these suggestive methods of practical work.—A. H. W.

JUNIOR AUDUBON WORK

For Teachers and Pupils

Exercise XXVII. Correlated Studies: School Gardening, Reading and Spelling

Feathers, Part III

In exercises XXIV and XXV, we took up the structure of feathers in as simple a way as possible, and also the different kinds of feathers. A review of the points there given will be helpful before going on with the subject matter of this exercise, namely molt and coloration with particular reference to the sexes.

Although the feathers of an adult bird in their perfection may appear to be immaculate and indestructible, we must remember that the strain and constant usage to which they are subjected in flight and the varied activities of the bird result in wear and tear quite similar to that of any clothing. The problem of renewing feathers is a more difficult one than that of renewing clothes, however, since a bird cannot well spare its plumage to be made over, or even spare it long enough to change to a new plumage. At all times, the bird must be protected from heat, cold, and moisture, so that the renewal of its feathers must be accomplished in such a way as not to seriously interfere with its life-activities. This is effected by a process known as *molt* (sometimes spelled *moult*), which means *changing* the feathers. The peculiarity of molt which distinguishes it from an ordinary exchange is that it takes place at certain periods, when old feathers are shed as new ones grow. A bird is never naked, except in some instances at birth, when it may be nearly so.

In order to follow clearly the different molts which birds undergo, let us begin with nestlings. In general, nestling birds are divided into two groups, according as they are naked or nearly so, or protected by a covering of down-feathers at birth. The words used to describe these two conditions look harder to spell and pronounce than they really are. Try writing on a blank sheet of paper the following table. Once learned, it will be a constant help to you in the study of birds.

Nestlings	{ Altricial, naked or nearly so at birth.
	{ Præcocial, covered more or less thickly with down at birth.

NOTE.—Altricial birds are sometimes referred to as *nidicolous*, which means dwelling in the nest, and præcocial, as *nidifugous*, which means fleeing from the nest.

Plumage	Molt	Time
1. Natal Down	Postnatal Molt	Spring-Summer
2. Juvenal (nestling)	Postjuvenal Molt	Fall
3. First Winter Plumage	First Prenuptial Molt	Spring
4. Nuptial Plumage	First Postnuptial Molt	Fall
5. Second Winter Plumage	Second Prenuptial Molt	Spring
6. The sequence of plumages and molts follows by seasons in like order.		

NOTE.—A few exceptions occur. The nestling plumage may be shed earlier in some species than in others. Most nestlings shed it very soon after leaving the nest. A few species wear it two or three months before changing to the first winter plumage, while a few others wear it until the prenuptial molt. Likewise, a few species do not attain the full nuptial plumage until the first postnuptial molt. The Scarlet Tanager and the American Goldfinch are familiar examples.

Again, nearly all birds make a complete change of feathers every fall, but Ducks and Ptarmigan, for special reasons of protection, undergo a more limited change at that time. If a Ptarmigan, for example, assumed its white winter plumage before the snow came, it would be a very striking object indeed. In the fall, therefore, it wears a transition plumage through September and October.

Just as in every other part of bird-study there is so much to learn that one is likely to become confused or discouraged, so in this matter of plumage and molt there are many unexpected points to observe and consider. For our purpose, however, it is sufficient to remember first, that there are two general groups of nestlings, those which are nearly naked at birth and require a long period of care in the nest before being able to fly and find food, and those which are well covered with natal down when hatched and require little attention from the parents; second, that every bird changes its plumage completely once a year at least; third, that some birds change their plumage twice a year completely, while others make only a partial change or no change at all, except what comes about by the wear and fading of their feathers; and fourth, that a few birds for special reasons of protection or ornamentation make additional changes at certain times of the year. It will lend enjoyment to your study of birds if you pay attention to the details of their dress from season to season. The more study one puts upon these matters, the more profit one gets. You may be able to recognize an adult male Goldfinch, but can you tell it in the winter, or can you tell a young male Orchard Oriole from an adult one or a young male Red-winged Blackbird from either the adult male or female? If you have colored pictures or charts in the school-room, or a museum close at hand, select a few groups of familiar birds and study their likenesses and differences with respect to plumage. Look at a young Robin or a young Bluebird in the juvenal plumage and then look at their parents, and also, at their relatives, the Thrushes. If it was not for the plumage of the young birds, you might not understand their relationship.

A few suggestions about the annual life-cycle of birds may help you to remember some of these difficult things. Let us take a pair of Robins, about

to build a nest in April, as an illustration of the sequence of plumages and molts. The adult Robins are in perfect *nuptial* plumage. They are about to build a nest, and to rear a brood of nestlings whose *juvenal* plumage, after the *natal down* is shed, will look very different from that of their parents. A second and sometimes a third brood may be hatched and reared, so that during the summer, by watching this single family, in two or three divisions, as the case may be, you can see Robins in all stages of *juvenal* and *nuptial* plumage. Before the regular migration south, there is a time when many birds are molting. It is a silent time, for birds sing little if any when changing their plumage. Fortunately for them, Nature has provided that they shed their feathers a few at a time and not too many at a time on any one part of the body or irregularly on the two sides, so that usually flight is not interfered with. Ducks are an exception, but the history of their changes of plumage is a story by itself. *Postnuptial* means *after* the bridal or mating season, as you see, and since our family of Robins is made up of both old and young, we shall be able to observe the *postjuvenal* molt of the young and the *postnuptial* molt of the parents during the early fall. Since the long migration journeys must expose a bird to unusual wear and tear of plumage, it is evidently advantageous to have new clothes before starting on these perilous trips. As a rule, birds molt before migrating, but again some exceptions occur. Through the winter, we have so few Robins venturing to brave the northern latitudes, that we may scarcely expect to see any before March. Our Robins in spring are wearing after the pre-nuptial and postjuvenal molt of the preceding fall, a "first winter" and *nuptial* garb, according to their age. It is very instructive to compare the nuptial plumage of the adult Robins with the "first winter" plumage of the young ones. All pair and nest, and by the next fall, having molted, no further difference in plumage is noticed, except in the nestlings of the season, which of course resemble the nestlings with which we started the preceding season.

We have already taken up briefly the most strikingly marked and colored *kinds* of feathers, but we have not considered the differences in color and markings of old and young birds, or of male and female birds. The reasons for the great variation in color and markings, not only of birds but of many other animals as well as plants, are far too complicated for our present study. We will simply learn that these variations occur and that we must, therefore, study the plumage of young and old birds as well as of male and female birds separately.

In many cases, the two sexes seem to be nearly or quite alike, as for example, the Blue Jay, Crow, Robin, and Grackle, although the young of some of these species may differ markedly from the adults. In other cases, one would hardly recognize a male and female as belonging to the same species if only the color of the plumage was considered. The Red-winged Blackbird, American Goldfinch, Towhee, Scarlet Tanager, and Baltimore Oriole are familiar examples. By observing the size, shape, bill, manner of flight, and habits, one can see the relation of the two sexes, but it takes careful study on the part of a beginner.

Young birds are usually colored more nearly like the adult female than the male. Few instances occur where the female is larger or more brilliantly colored than the male, a fact which helps many times. It is usually the male, also, who wears special ornaments in the mating season, though, as in the case of the Herons and Egrets, both sexes may be adorned. How far the necessity for protection, especially during the nesting-season, has influenced the coloration of plumage is not definitely known. Some male birds which are highly colored do not seem to be better protected or as well as their duller mates. Two men who worked a lifetime gathering together facts such as those about the coloration of plumage attempted to explain the variations which they observed in different ways. The names of these men you ought at least to know, Charles Darwin and Alfred Russell Wallace. Perhaps you can find pictures of them and learn something of their lives and the kind of books they wrote. Their *theories* are too advanced for you to study now, but as you near college age, you will look forward to learning many things which they wrote. It is interesting to know that what appears to be so simple an object as a bird's feather is so intricate and hard to explain, even by men of science.—A. H. W.

QUESTIONS

1. What creatures have a covering of feathers, fur, or scales?
2. Which of these three coverings is the most desirable for protective purposes?
3. Can you give examples of any birds whose plumage changes by wear? By fading?
4. What is the 'eclipse' plumage of male Ducks? How long is it worn?
5. Are you familiar with the male and female Purple Finch or Rose-breasted Grosbeak and Indigo Bunting? Have you pictures of them?
6. Can you tell a young Starling from an adult female?
7. What birds have spotted breasts in juvenal plumage and plain breasts in adult plumage?
8. What highly colored males change to the color of the females after the nesting period? Do you think this change might be a protection to them as they migrate South?
9. Look up the derivation of altricial and præcocial. Reference: See Chapman's 'Handbook of Birds of Eastern North America,' pp. 84-90 and color-chart, p. 26.

SPELLING EXERCISE

natal	immaculate	molt	adult	metallic
postnatal	juvenal	iridescent	sequence	altricial
plumage	prenuptial	nuptial	coloration	præcocial

A. H. W.

FOR AND FROM ADULT AND YOUNG OBSERVERS

AN EXCEPTIONAL CASE

It is a well-known fact that birds like plenty of elbow-room in building their nests, which may make the following story interesting to BIRD-LORE bird-lovers.

Close to the corner of our piazza, which is daily occupied by the family, are two small magnolia trees. Both a pair of Robins and a pair of Chipping Sparrows selected at the same time the same one of these two trees to build in. For two days there was continual war between the two pairs. Every time either pair would take possession of a particular crotch, the other pair would fight them off. About the third day, both Robins and Chippys seemed to decide that it was a drawn battle, each pair forsaking that particular tree for the second one a few feet away, and each pair of birds quietly and peacefully going to work nest-building in the second tree. The more interesting fact was that they placed their nests not more than a foot and a half apart from each other.



JUNIOR AUDUBON SOCIETY, TYNGSBORO, MASS.

Each pair seemed peacefully content, the young birds in either nest being hatched only one day apart. Feeding went on also in perfect peace.

When a week old the young Robins were destroyed by a squirrel or cat, and though the Chippy's nest was only a little more than a foot above the Robin's nest, the young Chippys were still being fed. The following day they too had disappeared, and the parent birds were sitting disconsolately about.—
[Miss] LAURA VANDERBILT, *Englewood, New Jersey*.

[Very few observations concerning the proximity of nesting birds, whether of the same or different species, are on record as compared with observations of individual nests. By selecting a small area and carefully inspecting the occupants of each tree, hedge or other site, much can be learned regarding the disposition and preferences of nesting birds. The writer once found three pairs of birds nesting in a single apple tree: a pair of Robins, a pair of Chipping Sparrows, and a pair of House Wrens, with two unoccupied or previously occupied nests, one of the Robin and one of the Sparrow.—
A. H. W.]

OBSERVATIONS OF ADULT AND NESTLING ROBINS

I

Early in June a baby Robin fell out of its nest into the yard of my neighbor. The children picked it up and brought it into their house. They soon grew tired of feeding it. The next day the poor little Robin was given to my daughter. She was very happy to have the care of it. We put it on the scales and found it weighed three ounces. We fed it on worms and crumbs. It soon learned to open its mouth when a worm was held all ready to drop in.

At the first peep of day "Rob" made the most insistent chirps for food and would not be quiet until fed. After a week "Rob" became very tame. We had made a perch for him by putting a branch into a pail of sand. There he would sleep at night.

At this time our strawberries began to ripen and we took "Rob" out, and he would hop about and eat his fill of the ripe berries.

If he got out of sight we would chirp and he would answer and hop out so we could see him. He enjoyed this freedom very much. Soon he grew strong enough to fly as high as the pine tree. He rested on the lowest branch at first. On gaining courage he one day hopped clear to the top. This feat was something he was justly proud of. He chirped in answer to our calls to come down but he had gotten to the top of the tree and was perfectly satisfied. After much coaxing he hopped down and finally flew back to my hand. The next day this performance was repeated. After a day or two we knew he would be strong enough to take care of himself. He spent his nights in the house but all day he hopped about the strawberries.

One night he insisted on staying in the tree and sleepily chirped in answer to us but he had made up his mind to stay where he was. Then we knew he intended to take care of himself.

For a week after this every day he would fly down to us as we picked the berries, and after being fed, he would fly away. He stayed about all summer.

We had a vacation of two weeks in August, and on arriving home we called "Rob," "Rob," and chirped. He immediately answered us and we knew he was safe. He did not come to say good-bye when he went South, but we hope to see him again this summer.—MRS. N. A. WOOD, *Merrimac, Massachusetts*.

[The return of birds to their former nesting-sites or to the vicinity of their birth is a subject which has long aroused wonder on the part of observers. Careful records kept in limited areas ought to throw much light on the matter.

It is probable that when the young Robin described above made its initial exploration of the pine tree, the strangeness of its position and the unusual exertion of reaching it induced some fear and fatigue. All young birds the writer has had experience with exhibited like behavior in similar conditions.—A. H. W.]

II

The following may interest some BIRD-LORE readers. It is about Robins. Friday morning, June 12, about eight o'clock, I was walking down my yard and I noticed a Robin tugging at a worm. I watched it for about five minutes. It would try for the worm then stop and look around, then pick at something else. After a few minutes it got the worm and flew to a nearby fence. Then it walked along the fence looking around several times until it got within five or six feet of me. It then flew to the ground, walked over with the worm to where it had been at first, and looked at the thing which it was biting at, and then flew off. After it was gone I went to see what it was that it was looking so queer at and it was a dor bug (?).

Sunday, June 14, when I was coming home from church I heard a queer sound and I saw two Purple Grackles being chased by a Robin and they suddenly lit on an electric wire. One of the Grackles had a worm in its mouth that it had stolen from the Robin. When the Robin came and lit on the wire the Grackles flew off and the Robin just watched them.—FRANK B. WELLINGTON, *Medford, Mass.*

[The actions of all birds are interesting, none more so than those of our common birds. The Robin is a good bird on which to practise *continued* observation. Its notes, plumage, feeding-habits, nesting-habits, and actions are sufficiently varied to furnish instruction even to experienced students. On the morning of April 6 the writer saw a Blue Jay uttering sweet notes suggestive of the Catbird.—A. H. W.]

THE BLUE JAY

Oh Blue Jay up in the maple tree
Will you sing a song for me?
Oh you pretty little Blue Jay,
That comes in the month of May.
Oh Blue Jay so loving and true,
With your own sweet color of blue;
For you have the sweetest breast,
And four little eggs in your cozy nest.
Oh come and sing a song for me
Bright Blue Jay in the maple tree.
—MARGARET WARD (Age 9 years), *Grand Rapids, Mich.*

THE WAY BIRDS BUILD THEIR NESTS

One day as I was on the piazza I saw a bit of straw in the corner of the roof of the porch. I looked and looked until I saw a Robin come. It is a beautiful bird. Its crimson breast is magnificent. It is a graceful bird. It was bringing bits of straw, mud, hair, and feathers.

Two days after as I looked from my window I saw that the nest was all built. Four days later I took an extension-ladder and climbed up to the nest. The mother bird was on the nest as I started to climb, but as I got up she flew away and I saw two small blue eggs. Next day as I looked in the nest I saw there were three eggs in it. Next day when I looked in the nest there were four eggs in it. Five days later when I looked in the nest I saw three small, dingy, wet birds. The mother then came with a worm in her mouth. She did not notice me but gave some of the worm to one of the birds. Then she gave some to the next and then to a third. The fourth egg was pipped and a little bird's head was out. The bird was alive. It was very weak.

In five days the mother threw the birds out of the nest. They had to fly to keep from falling. They gave a few feeble flaps. All were so surprised that they did not fall that they flapped and flapped until they were raised in the air.—KNOX KINNEY (age 9 years), *Tyngsboro, Mass.*

[Did the mother bird really "throw" the young birds out of the nest, or did they flutter and become uneasy and appear to be crowded out as she cleaned the nest or sought a place in it? This is a point for sharp eyes. Young Swallows stay in the nest until they seem to fill it and to actually overflow it, but when they take their initial flight they are not awkward or apparently afraid, for they fly with ease almost from the start. The young of most perching birds however, must learn something of their environment and test their own powers first, before flying with ease.

The contribution above is one of a considerable number sent from Tyngsboro, Mass., where an active Junior Audubon Society has been organized by the Grange as shown in the accompanying picture. This Society received the Educational Leaflets of the National Audubon Society through the Grange, one leaflet at a time, as the bird which it described arrived. Prizes of bird-books, games and nesting-boxes were also given by the Grange to the members of the Society for the best original paper on birds.—A. H. W.]

TWO DAINY GUESTS

In the spring of 1912, my brother built a bird-house for me, out of a trunk of a small ash. It was about a foot long and six inches in diameter, hollowed out inside. We set it on top of a grape-arbor in the back yard. A male and female Wren discovered it and built a nest there. They would fly to the ground and gather string, sticks, grass, and pieces of straw to build their nest. I would sit very close to the little Wren-house and watch them sing. They sang very beautifully and did not seem to be a bit afraid of me. These dainty guests stayed in the house quite a long time and I was very glad to have them there. I love the birds and want to learn as much as I can about their habits. I am enjoying BIRD-LORE very much. It will help me in my study of the birds.—GLADYS FANTON (Age 13 years), *Good Ground, L. I.*

[There are two ways to observe nesting birds. One is to stay quietly by and watch what the birds do *without disturbing them*, the other is to look into their nests and to interfere more or less with the movements of the parents and young, by handling or otherwise disturbing them. For beginners the former method is preferable. Indeed most observers can learn what they wish to know by simply *watching*.—A. H. W.]

PHOTOGRAPHING NESTING BIRDS

I have been observing birds for about a year. I live in a large city but near a grove of trees where I have had many chances for study.

One day while hunting for nests I found one with four baby Mockingbirds in it. The next time I went three had grown very much but one was little and had no feathers. The third time I went my mother went with me and we took a kodak. One of the birds was gone. I took the other three carefully out of the nest and placed them on my hand while the inclosed picture was taken. The mother bird hovered anxiously around, and came quite near. I put them carefully back in the nest and stepped back to see what the mother bird would do. She would not come to the nest while we were there. One of the birds tumbled out but we put it back. As we were going away the mother bird flew to the nest with something in her mouth.

I have observed the following birds this year:

Mockingbird, Dove, Scissor-tail, Hedge Sparrow, Field Lark, Wren, Hummingbird, Cardinal, Blue Jay, Chicken Hawk, Buzzard, Crow, Blackbird, Martin, Wild Geese, Chaparral (-cock), Mexican Canary. Heard but not seen: Whip-poor-will, Bob-white, Screech Owl. Three unidentified.—MARVIN HALL (Age 10 years), *Dallas, Texas*, Dec. 1915.

[Many times the question is asked whether it is wise to attempt to photograph nesting birds if one is an amateur photographer. Even with the greatest care accidents or mishaps may occur, which makes it seem doubtful. The writer once permitted a student to take a baby Spotted Sandpiper from the nest to photograph. The sun was hot on the exposed sand-spit where the nest was located, and, although the time of making the picture seemed short, the little Sandpiper died within a few hours, since the timid parents failed to return to the nest promptly enough to shelter it from the heat. Certain species have less fear than others, which makes the operations of photography easier, but even an expert must exercise the greatest care and endless patience to secure pictures without injuring the nestlings. Young birds which are about to fly, if disturbed, will usually flutter from the nest and fall, while the excitement of being handled is often dangerous. In the case of such large species as the Osprey, which stays weeks on the nest before attaining the power to fly, one may approach the open, exposed nest and stroke the nestlings, if careful not to make sudden movements, provided the parents do not interfere. In general, however, it is best to avoid handling nestlings. A picture of the nest with the sitting parent, or of the parents and young after the latter have left the nest, may sometimes be secured advantageously.

Certain suspicious species, like the Goldfinch, may abandon a newly made nest if it has been disturbed, even during their absence.

The foregoing communication bears a double message, therefore, for while it describes a successful bird-photograph, it also suggests the danger of disturbing nestlings by exciting them so that they fall out of the nest.—A. H. W.]

CAUGHT IN A SHOWER

“These members of the ‘Wake Robin’ Club in Philadelphia are wearing hats improvised by themselves. Caught in a heavy rain during a bird walk,



TWO MEMBERS OF THE 'WAKE ROBIN' CLUB

we begged some wrapping paper at a way station and the girls in the picture explain the rest."—CLARA J. CLAIR, *Philadelphia*.

[Only those observers who go afield rain or shine, know the real joys of bird-study. There comes to mind a sudden wild, blustering squall off Lake Michigan, when Lincoln Park in Chicago was thronged with migrants. In a few moments, a bright, spring morning became overcast, and a strong wind with rain literally dashed from all quarters. A flock of Grackles barely breasted the storm, perched thickly in a half-leaved tree. Robins rudely swept from the turf, struggled to keep suf-

ficient balance to enable them to flutter into the nearest shelter, while small birds of many species vanished almost as if by magic. The writer, huddled underneath an insignificant tree near the entrance to a road-tunnel, and hanging desperately to a wrenching umbrella, was amazed to find at close quarters, several birds, the rarest of which was a Blue-headed Vireo. While the squall lasted, and escape was dangerous, fear of their human companion seemed to be wanting, or, more probably, to be lost in the suspense created by the havoc-making elements. As the wind subsided and tossing branches ceased snapping, the birds quickly regained their normal attitudes and betook themselves to more remote quarters. It is one thing to look at a bird through field-glasses with the sun at one's back and quite another, to look it squarely in the eye in the teeth of a gale.—A. H. W.]

AN OPPORTUNITY FOR HELPFUL EXCHANGE CORRESPONDENCE

I am forwarding to you under separate cover three school papers, and the supplement of the official organ of the Education Department of South Australia. They may interest some of your members, in so far as they indicate the steps we are taking in our schools to educate the 'young idea' up to bird protection.

What are our American cousins doing in this direction? Could any of them send a written message of encouragement, to be printed in the Children's Hour in this state? I'm sure our boys and girls would be most appreciative. Yours sincerely, ALFRED GEO. EDQUIST, *Adelaide High School, Education Department, Adelaide, South Australia*.

[A request coming from so distant and so attractive a country as Australia ought to find a ready response from the boys and girls of BIRD-LORE'S School Department.

Observation of bird-life in any part of the world is attractive, but on a continental island like Australia, occur some species not found elsewhere, unless, in exceptional cases in remote ages of the past. An exchange bureau of observations between America and Australia is a fine idea. How many of our readers will volunteer exchange observations?—A. H. W.]

A DELAYED COMMUNICATION

List of Herbs Raised by Revillo Wetherbee (age 10 years), Lyndon, Vt.

Anise:	Horehound:	Wormwood:
For garnishing.	For medical use.	For medical use.
Sweet Basil:	Lavender:	Parsley:
For seasoning.	For perfume.	For garnishing.
Borage:	Sweet Marjoram:	Celery:
Excellent for bees.	For seasoning.	Vegetable purposes.
Coriander:	Rosemary:	Caraway:
For garnishing.	For seasoning.	Used in cakes.
Dill:	Sage:	Catnip:
For use in pickles.	For dressing.	For seasoning.
Florence Fennel:	Summer Savory:	Small Peppers:
For use in salads.	For seasoning.	For seasoning.
	Thyme:	
	For seasoning.	

[By referring to BIRD-LORE, Vol. XVIII, No. 1, page 48, a picture of the herb-garden described above will be found. Master Wetherbee adds:

"I am writing to thank you for sending me the copy of BIRD-LORE. I was very much pleased with it. I inclose list of herbs and their uses. I planted them out the twentieth of May, and harvested them around the last of September."—A. H. W.]

THE REDSTART

By T. GILBERT PEARSON

The National Association of Audubon Societies

EDUCATIONAL LEAFLET NO. 86

Of all our Warblers, extremely active birds though they are, not one displays so many different motions in one short minute as a Redstart. It dashes to and fro, up and down, in and out of the shrubbery, hither and yon, with infinite variety of movements, like some brilliant, intoxicated butterfly, whose exuberance and energy are utterly boundless. It is a small bird, only about four and three-quarters inches long, but by its song and activity it keeps itself much more in evidence than many a bird twice its size.

"Ching, ching, chee; ser-wee, swee, swe-e-e he sings, and, with wings and tail outspread, whirls about, dancing from limb to limb, darting upward, floating downward, blown hither and thither like a leaf in the breeze. But the gnats dancing in the sunlight and the caterpillars feeding in the shade of the leaves know to their sorrow that his erratic course is guided by a purpose." So writes Frank M. Chapman.

All during the song-season the male Redstart makes his presence known, for he is an unusually constant singer and may be heard at almost any time of the day. Some observers say he has two distinct songs, others say he has three, while still others aver that the bird has as many as five or six. Gerald Thayer, I believe, is authority for the statement that about his home at Monadnock, New Hampshire, the Redstarts have what he considers three comparatively constant songs, which serve as the basis for all other varieties of their music.

For my part, I have found the Redstart's song to be bewildering and difficult of identification more times than I care to admit. When, in spring, I find myself in a locality where Warblers are singing, if I can remain there a day or two and find what species are in song, and watch, and think hard, my memory is at length refreshed to the extent that I soon begin to feel sure of distinguishing the Redstart's tune with some degree of confidence. Others have at times guardedly hinted that they have experienced similar difficulties in remembering from year to year the Redstart's notes. It is certainly true that to any but those with particularly gifted ears the song of this bird lacks any striking characteristic, such as we all readily recognize in that of many others, the Ovenbird, for instance, or the Wood Thrush.

The nest of the Redstart is made of leaf-stalks, thin strips of bark, plant down, and similar soft vegetable materials. Usually it is lined with fine rootlets or delicate tendrils. Apparently it is always placed in the crotch of a sapling two to fifteen to twenty feet from the ground. One favorite situation, in which I



REDSTART

Upper figure, female. Lower figure, male.

Order—PASSERES
Genus—SETOPHAGA

Family—MNIOTILTIDÆ
Species—RUTICILLA

National Association of Audubon Societies

have often found the nest, is between a small branch, little more than a twig, and the main stem of the tree, often as much as three inches in diameter. In such positions the nests were frequently in plain view—after they were once discovered. Sometimes, however, the nest is so well hidden that it may be discovered only after a most careful and prolonged search.

The four or five eggs are white, variously blotched and spotted with brown and gray, thus resembling those of the yellow, or summer, Warbler. They measure about sixty-five hundredths of an inch long by fifty hundredths wide.



A MOTHER REDSTART AND HER NEST

Last spring it became apparent that a pair of Redstarts had a nest hidden somewhere within the recesses of a certain limited growth of saplings near our summer camp on Lake Champlain. Spying on the birds and watching their movements proved fruitless, the thick foliage blotting out all vision of the female in every instance when she was seen approaching. As for the male, he sang daily and hourly, and almost every ten minutes, from his perch on a large tree nearby. At length every sapling was searched in turn, until the nest came in sight hidden by the leaves in a crotch twelve feet from the ground.

"The young males of this species," Audubon notes, "do not possess the brilliancy and richness of plumage which the old birds display until the second year, the first being spent in the garb worn by the females; but, toward the second autumn, appear mottled with pure black and vermillion on their sides. Notwithstanding their want of full plumage, they breed and sing the first year like the old males."

Mr. E. H. Forbush, in his book "Useful Birds and their Protection," has written:

"The insect-food of the Redstart is perhaps more varied than that of any other common Warbler. Apparently there are few forest insects of small size that do not, in some of their forms, fall a prey to this bird. Caterpillars that escape some of the slower birds by spinning down from the branches and hanging by their silken threads are snapped up in mid-air by the Redstart. It takes its prey from trunk, limbs, twigs, leaves, and also from the air, so that there is no escape for the tree insects which it pursues, unless they reach the upper air, where the Redstart seldom goes, except in migration. It has been named the fly-catcher of the inner tree tops, but it is a fly-catcher of the bush tops as well.

"While there are few small pests of deciduous trees that it does not eat in some form, it is not confined to these trees, but forages more or less among coniferous trees. Also it is seen at times in orchards, and gleans among shade-trees in localities where the woods are cut away. It is impossible to weigh the pros and cons of this bird's food, for no thorough examination of it has ever been made. It is an efficient caterpillar hunter, and one of the most destructive enemies of the smaller hairy caterpillars. It catches bugs, moths, gnats, two-winged flies, small grasshoppers, and beetles. It probably secures a larger proportion of parasitic hymenoptera and diptera than most other Warblers, occasionally destroying a few wasps; otherwise, its habits seem to be entirely beneficial."

The summer home of the Redstart extends as far northward as Labrador and southern Alaska; in fact, it goes almost to the limit of tree-growth throughout Canada. The southern boundary of its breeding-range may be roughly traced by a line extending from the North Carolina Mountains to Utah, and thence northwesterly to northern Washington. In a few cases, breeding birds have been found south of this area, for its nesting has been reported at Greensboro, Alabama; Hopefield, and Jackson, Mississippi; and at Fort Union, New Mexico.

As this species is highly insectivorous in its feeding habits, it of necessity must depart from the land of frost upon the approach of winter. Therefore, Redstarts migrate southward through the Southern States. Many in the East follow down the peninsula of Florida, and then across to Cuba, Haiti, and others of the West Indies Islands, where they pass the winter. The larger number, however, reach the sea at various points along the west coast of Florida, Mississippi, Louisiana, and eastern Texas. Here they pause only long enough to supply themselves well with food, and then at the close of day start out boldly across the Gulf of Mexico. Their journey to Yucatan or to western Cuba is made in a single night, although the distance is from five to seven hundred miles.

Many of the Warblers pass their winter on the eastern shore of southern Mexico and Central America, although numbers of others push on by the

land-route to northern South America. Here they remain, living luxuriously on the insect-life that inhabits the Tropics, until the spell of the mating-season begins to come over them. Then, following the general lines of the migration-routes by which they went south, they turn their wing-beats back toward the northern United States and Canada.

Here are some of the dates when Redstarts have been known to reach different points along the Atlantic seaboard during their spring migration: Southern Florida, April 3; Atlanta, Georgia, April 6; Englewood, New Jersey, April 26; Portland, Connecticut, May 3; Durham, New Hampshire, May 10; Nova Scotia, May 21. From this it would appear that it takes about six weeks for the birds to journey from southern Florida to their summer home in southern Canada. Of course, they could make this trip much more quickly if it were necessary, but they follow the opening of the spring and the consequent reappearance of insect-life.

Somewhat similar facts have been recorded of the coming of the Redstarts that pass up the Mississippi Valley, as are indicated by the following dates of the first appearance at different localities along the inland route: New Orleans, Louisiana, April 5; St. Louis, Missouri, April 17; Oberlin, Ohio, April 27; Lake Forest, Illinois, May 3; Columbia Falls, Montana, May 20.

As the Redstart is a beautiful, attractive, and exceedingly useful bird, it is perfectly apparent that the legislatures of the various states, as well as Congress, have been wise in enacting laws for its protection. In virtually every state where the Redstart is found, the so-called Audubon Law has been written on the statute books. No one should ever kill a Redstart.

The Painted Redstart (*Setophaga picta*) is a closely related species, which is mainly Mexican in its habitat, but appears north of the Mexican border in southern Arizona and New Mexico. It has a gaudy beauty—lustrous black, with a large white patch on the wings, white edging on the tail and the middle of the breast, and abdomen rose-red. It occupies the valleys and cañons among the foot-hills of the mountains, where a sparse growth of oaks seems to favor its habits. "Their motions," H. W. Henshaw writes of these birds, "are almost an exact reflection of those of the common Redstart, which they so much resemble in form. With half-shut wings and outspread tail, they pass rapidly along the limbs of trees, now and then making a sudden dart for a passing fly, which secured, they again alight and resume their search."

Mr. Henshaw was unable to find the nest of this Redstart; but it is now known to be placed on the ground, usually concealed under some overhanging stone or stump amid shrubbery, and preferably in a stream-bank. The nests are made of finely shredded materials and lined with hair. The eggs are white, dotted with reddish brown.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, Secretary

Address all correspondence, and send all remittances for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City.

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Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

\$5 annually pays for a Sustaining Membership
\$100 paid at one time constitutes a Life Membership
\$1,000 constitutes a person a Patron
\$5,000 constitutes a person a Founder
\$25,000 constitutes a person a Benefactor

HONOR TO WILLIAM DUTCHER

About five and a half years have now elapsed since William Dutcher, President of this Association, was stricken with paralysis. During all this time he has been unable to speak or engage in activities of any character. His mind is, in many ways, as clear as ever, and he follows with the keenest interest every effort of the Association. He reads continually, and by his gestures frequently communicates his desire to Mrs. Dutcher, his sister, or his attendant, that he wishes cut from a newspaper or magazine that he has been reading some note in reference to the protection of wild birds or animals.

To those who have lately come into the field of wild-life conservation, the great work of Mr. Dutcher should be told again and again. It was he who gave life and purpose to the National Committee of Societies, twelve or fifteen years ago; and, largely due to his energy and foresight, the National Association was organized eleven years ago last January. The people of America owe him a debt of gratitude which can never be repaid.

This feeling of appreciation of Mr. Dutcher is felt by thousands of persons throughout the country, who have never told Mr. Dutcher a word about it. I wish to take this opportunity to say to the

members and friends of the Association, that anyone who feels disposed to write him a letter at any time may feel assured that their messages will be received by Mr. Dutcher with the greatest pleasure. If anyone doubts that a letter from an old friend, or from any bird-lover, although unknown to him personally, gives him the keenest joy, this doubt would be dispelled should they visit him and see him produce from his pocket cherished communications of this character. The least we could do for him would be to send him a few words of good cheer and encouragement.

Mr. William Dutcher, whom we may rightfully call the Father of American bird-protection, may be reached by letter at 949 Park Avenue, Plainfield, New Jersey.—T. GILBERT PEARSON.

A General Index to Bird-Lore

An index to the file of BIRD-LORE has been greatly needed, and it is gratifying to announce that one is now ready for publication. It embraces volumes I to XV, inclusive, and its references record not only the names of birds, but the name of every contributor, all articles (by quoted title), and general topics. The illustrations are

analytically indexed, that is, a reference is given to every separate figure where more than one occurs on a plate, and if it is in colors that fact is noted. Finally all books and magazines reviewed are indexed. This document, therefore, besides

its primary purpose, is virtually an alphabetic record of progress in bird-study and literature since the opening of the century. This index has been compiled by Ernest Ingersoll, and will be sold at the office of this Association at 50 cents, net.

CONTROL OF CATS IN MONTCLAIR

It will be recalled that an educational campaign in regard to vagrant cats in Montclair, New Jersey, during the spring and summer of 1915, resulted in a municipal ordinance that attracted wide attention by its novelty both of purpose and of method. Many persons in other towns have been watching hopefully this experiment in controlling a menace to bird-life; and it will therefore be of interest to show what has been accomplished under it thus far.

The Montclair ordinance prohibited "vagrant or unidentified" cats to be at large; ordered that a cat shall be regarded as vagrant "unless it bears a tag furnished (at cost) by the town clerk, or a collar bearing the owner's name and address;" and provided regulations for disposing of vagrant cats. This solved the problem of "protecting the household pet, while permitting the destruction of the outlaw." A later ordinance provided for the appointment of an animal warden, who was

required to give his entire time to the enforcement of the dog and the cat ordinances, to the keeping of the pound, the making of a census of the dogs and cats of the town, and the destruction of those not duly licensed or identified. This warden's house-to-house investigation has resulted in the tagging of many cats, and in the destruction of many vagrants. Already the amount of his salary has been returned to the town in license-fees, etc. After duly warning citizens, and explaining to them tactfully the purpose and utility of the ordinances, he began a systematic campaign for the destruction of vagrant cats. On the request of a property-owner he sets a trap on the premises and removes the unidentified cats taken. Any cat duly tagged is at once released unharmed. The plan is locally considered a success, and a bill is now before the New Jersey State Legislature to give broader powers to towns and municipalities in coping with the evil.

OMAHA'S CEMETERY-SANCTUARIES

One of the immediate results of a recent enthusiastic meeting of bird-lovers in Omaha was the formation of a local Audubon Society, whose first effort was to establish the cemeteries of the city as bird-sanctuaries. Superintendent H. S. Mann, of the great Forest Lawn Cemetery, had previously been in correspondence with the National Association, and announced that arrangements to that end were under way at Forest Lawn. It was announced that the Prospect Hill and another cemetery would do the same. Prizes are to be offered to the boys of the manual-training classes in the city schools for the best

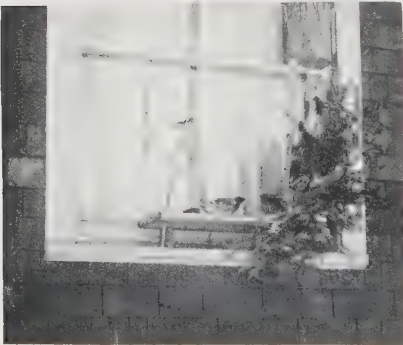
bird-houses, feeding-tables, etc., made for placing in these cities of the dead. The newspapers and city authorities are lending help and strength to the work. "The Audubon Society of Nebraska," remarks the *World-Herald*, editorially, "is making a strenuous effort to increase its junior membership throughout this city and state, which means that there will be many delightful 'field days' in the woods during the summer weeks, and that the feathered folks will discover themselves welcome indeed in these parts. Several bird-clubs have already been organized, and the campaign seems sure of success."

SOME PRIZE PHOTOGRAPHS



DOWNY WOODPECKER AND WHITE-BREASTED NUTHATCH EATING SUET
FROM HOLES IN BARK

Photographed by Wm. B. Hoot, of Rochester, N. Y. First prize in 1916 Bird-Photograph Contest



OREGON JUNCOS AND A VARIED
THRUSH AT A WINDOW SHELF
Reduced from a Photograph by A. L. Campbell,
Multnomah, Oregon. Third prize



SONG SPARROW AND GOLDEN-CROWNED
SPARROW AT FEEDING-TABLE.

Photographed by Ametra S. Allen, Berkeley,
California. Fourth prize



A CHICKADEE WEIGHING HIMSELF AFTER HIS CHRISTMAS DINNER
Photographed by Mrs. Granville Ross Pike, North Yakima, Wash. Second Prize



CALIFORNIA QUAILS

Photographed by Wm. Webb, Jr., Salt Lake City, Utah. Tenth prize



CHICKADEE FEEDING AT A DISCARDED CHRISTMAS TREE
Photographed by Harriet S. Rider, East Norwalk, Conn. Seventh prize

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		Total	\$2,482 51

A BEQUEST FROM A MEMBER

The Association recently received a bequest of \$500 from the estate of Miss Rose Hollingsworth, of Boston, Massachusetts, who died in December, 1915.

Miss Hollingsworth had been a member of the Association since 1905, and this evidence of her interest in the cause of the protection of wild life was but a final

expression of her loyalty to a work in which she had so long taken an active part.

As is the custom of this Association, in the matter of bequests, this sum will be placed in the permanent Endowment Fund and the interest only will be used from year to year.

NOTES FROM MANY FIELDS

Improvement in Mississippi

The Legislature of Mississippi has passed an amended fish-and-game law, under the leadership of Representative W. J. Spears, which is an advance as compared with previous legislation, yet leaves much to be desired. Turkey gobblers may be shot, not to exceed twenty in one day, between November 15 and May 1, but Turkey hens are protected for five years. Doves are still 'game-birds' from July 1 to October 1, and Bob-whites from November 15 to February 15. No game may be sold in the state or shipped out of the state at any time. An attempt to tax dogs failed, although it was shown that Mississippi was supporting 700,000 dogs, mostly worthless curs, and that these were not only destructive of poultry and sheep, and one of the means of the spread of foot-and-mouth disease, but annually destroyed two million dollars' worth of Quails.

Bird Day Celebrated

More and more it is becoming the custom for state officials to declare Bird Days in the public schools. Notices of such days, set apart as special times for the consideration of the utility of birds to man, have come to our attention this spring from the following states:

Alabama.—Superintendent Flagin set aside May 5 as official Bird Day for the public schools of Alabama.

California.—Conservation, Bird, and Arbor Day, March 7. Set aside by the State Superintendent of Education.

New Hampshire.—The Governor issued a proclamation making April 14 Bird Day.

New Mexico.—Governor William C. McDonald proclaimed March 31 and April 14 as Arbor and Bird Days.

New York.—The Governor proclaimed April 14 as Bird Day. This is a bit later than in 1915, which was the first year this celebration was held.

Oklahoma.—State Superintendent R. H. Wilson announced April 14 as Bird

Day. Oklahoma has observed this date for several years.

Texas.—Governor Ferguson issued a proclamation designating April 3 as Bird Day.

Minnesota.—Governor J. A. A. Burnquist issued a proclamation making April 28 Arbor and Bird Day.

Robin-Killing Continues

The ruthless slaughter of Robins continues in central Kentucky and Tennessee, in spite of both law and gospel, although the law has been visited upon a few of the depredators, thanks to the energy of local bird-lovers. One case, at least, in Kentucky, is likely to meet with suitable punishment, for the culprit confessed that he had sold 121 dozen to his neighbors, and had stuffed a feather-bed and some pillows with the feathers of his little victims. A vast "roost" existed near his home in Whitley County.

Another great Robin roost was found southwest of Whitley, in Tennessee, and the slaughter there is described by W. S. Bryan, of Rugby, Tennessee, who says:

"Raiders from Fentress have been crossing Clear Fork of Cumberland into this county at night, and killing many of the birds on their roosts along White Oak Creek, almost within the very precincts of this town, but no arrests had been made until last night when nine of the raiders were caught with the goods on them. They had more than sixty birds in their sacks, so that the fines will amount to over \$300, the penalty being \$5 for each bird. The guilty parties, being well known, were allowed to return home on their own recognizance, but the fines will undoubtedly be enforced, as both the state and federal authorities are determined to put a stop to these cruel and lawless proceedings. The prosecution of the cases will be supervised by the officials of the Audubon Society, who have these matters in charge."

Upon learning these facts, the Association immediately telegraphed its local representatives to take up the matter, and it is sincerely to be hoped that the people of that region will be taught such a lesson

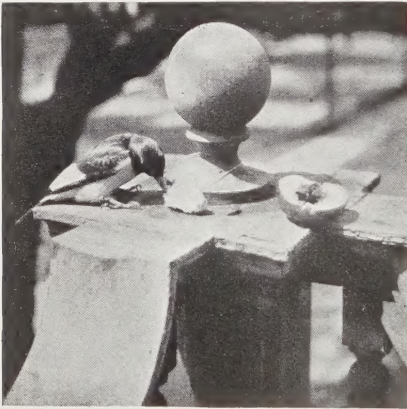


A FISH HAWK'S FAMILY
From an etching by Will Simmons

by the courts that they will let the Robins alone hereafter, lest something worse happen to them.

Bird-Study in Michigan

Most of the universities and larger colleges maintain summer schools at which biology is taught in a more or less practical way, and these often afford excellent local opportunities to bird-students. One of the most notable of these vacation courses is that to be had at the Biological Station of



A RED-HEADED WOODPECKER
Photographed by Alice H. Olds, Decatur, Ill.
Fifth prize in this year's contest.

the University of Michigan. This is situated in Cheboygan County, Michigan, between two lakes in a wild country, where nature is little affected by civilization. The course is in charge of Professor M. M. Ellis, of the University of Colorado, and is conducted mainly by field-work, with the advantage of opportunities for instruction in other branches of natural history. Full particulars may be obtained from the Secretary of the University, at Ann Arbor, Michigan.

The New "Blue Bird"

The *Blue Bird* magazine, which was founded and edited for several years by Doctor Eugene Swope, of Cincinnati, has passed into the hands of Mrs. Elizabeth

C. T. Miller, President of the Cleveland Bird-lovers' Association. Three issues have appeared under its new management, and the high standard that is being maintained is sufficient to explain its continued success. We bespeak for it the heartiest support of bird-lovers everywhere.

Bits of Cheering News

Mr. Henry Cæsar and some other members and friends of the National Association, purposing to organize a bird-club at Rumson, New York, where they have summer residences, prepared the way by sending all over that neighborhood a notice of this intention, and instructions as to putting up bird-houses early in the spring, in advance of the assembling of the families of summer residents. This forehanded example is worth following.

The Natural History Society of Harrisburg, Pennsylvania, has on hand a bird-house contest, partly open to everybody in that city and vicinity, and partly confined to school-children. Prizes are offered: (1) ten dollars in gold for the most bird-houses occupied by birds other than English Sparrows; (2) a silver cup to the school producing the best essay from personal observation by a pupil; (3) a silver cup for the best-constructed bird-house.

The people of Buck Hill Falls, Pennsylvania, have made a bird-sanctuary in their village, and have arranged to have a 'Bird Week' annually. This year, April 17 to 24 was set apart as "a restful period, with opportunities of getting acquainted with our feathered protectors and the early spring flowers, and of seeing Nature in her great transforming act."

Mr. Rufus Stanley has been conducting an elaborate system of reports on bird observation from school-children, in Che-mung County, New York, which has aroused strong local interest. The *Star-Gazette* of Elmira offered a long list of cash-prizes in a bird-house contest, and a surprising number of good boxes resulted.



1. PIPIT, winter
2. PIPIT, summer

3. SPRAGUE'S PIPIT
4. ALASKA YELLOW WAGTAIL
5. DIPPER

(One-half natural size)